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PTO/SB/05 (2/98)

08/29/00

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for nonprovisional applications under 37 CFR § 1.53(b))

Attorney Docket No.	210121.478C10
First Inventor or Application Identifier	Tongtong Wang
Title	COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF LUNG CANCER
Express Mail Label No.	EL6125232081US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

1. [ ] General Authorization Form & Fee Transmittal (Submit an original and a duplicate for fee processing)
2. [x] Specification [Total Pages] 187
   (preferred arrangement set forth below)
   - Descriptive Title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to Microfiche Appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
3. [ ] Drawing(s) (35 USC 113) [Total Sheets]
4. Oath or Declaration [Total Pages]
   a. [ ] Newly executed (original or copy)
   b. [ ] Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional with Box 17 completed)*
      i. [ ] DELETION OF INVENTOR(S)
      Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b)
5. [ ] Incorporation By Reference *(useable if box 4b is checked)* The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered to be part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. [ ] Microfiche Computer Program *(Appendix)*
7. Nucleotide and Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. [x] Computer-Readable Copy
   b. [x] Paper Copy (identical to computer copy)
   c. [x] Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. [ ] Assignment Papers (cover sheet & document(s))
9. [ ] 37 CFR 3.73(b) Statement (when there is an assignee) [ ] Power of Attorney
10. [ ] English Translation Document *(if applicable)*
11. [ ] Information Disclosure Statement (IDS)/PTO-1449 [ ] Copies of IDS Citations
12. [ ] Preliminary Amendment
13. [x] Return Receipt Postcard
14. [ ] Small Entity Statement(s) [ ] Statement filed in prior application, Status still proper and desired
15. [ ] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. [x] Other: Certificate of Express Mail

17. **If a CONTINUING APPLICATION,** *check appropriate box and supply the requisite information below and in a preliminary amendment*

[ ] Continuation [ ] Divisional [x] Continuation-In-Part (CIP) of prior Application No.: 09/614,124

Prior application information: Examiner not assigned *Group / Art Unit* not assigned

[ ] Claims the benefit of Provisional Application No. ____

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Respectfully submitted,

TYPED or PRINTED NAME Jane E. R. Potter REGISTRATION NO. 33,332

SIGNATURE Jane E R Potter Date August 29, 2000

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Tongtong Wang, Medina, WA; Chaitanya S. Bangur, Seattle, WA; Michael J. Lodes, Seattle, WA; Gary R. Fanger, Mill Creek, WA; Thomas S. Vedvick, Federal Way, WA; Darrick Carter, Seattle, WA; Marc W. Retter, Carnation, WA; Jane Mannion, Edmonds, WA; Liqun Fan, Bellevue, WA
Filed	:	August 29, 2000
For	:	COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF LUNG CANCER

Docket No. : 210121.478C10

Date : August 29, 2000

Box Patent Application
Assistant Commissioner for Patents
Washington, DC 20231

CERTIFICATE OF MAILING BY "EXPRESS MAIL"

Assistant Commissioner for Patents:

I hereby certify that the enclosures listed below are being deposited with the United States Postal Service "EXPRESS MAIL Post Office to Addressee" service under 37 C.F.R. § 1.10, Mailing Label Certificate No. EL615232081US, on August 29, 2000, addressed to Box Patent Application, Assistant Commissioner for Patents, Washington, DC 20231.

Respectfully submitted,

Seed Intellectual Property Law Group PLLC

Steven M. Plante

Steve Plante/Jeanette West/Susan Johnson

JEP:sds

Enclosures:

- Postcard
- Form PTO/SB/05
- Specification, Claims, Abstract (187 pages)
- Sequence Listing (518 pages)
- Declaration for Sequence Listing
- Diskette for Sequence Listing

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COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF LUNG CANCER

REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of U.S. Patent Application No. 09/614,124, filed July 11, 2000, which is a continuation-in-part of U.S. Patent Application No. 09/589,184, filed June 5, 2000, which is a continuation-in-part of U.S. Patent Application No. 09/560,406, filed April 27, 2000, which is a continuation-in-part of U.S. Patent Application No. 09/546,259, filed April 10, 2000, which is a continuation-in-part of U.S. Patent Application No. 09/533,077, filed March 22, 2000, which is a continuation-in-part of U.S. Patent Application No. 09/519,642 filed March 6, 2000, which is a continuation-in-part of U.S. Patent Application No. 09/476,300, filed December 30, 1999, which is a continuation-in-part of U.S. Patent Application No. 09/466,867, filed December 17, 1999, which is a continuation-in-part of U.S. Patent Application 09/419,356, filed October 15, 1999, which is a continuation-in-part of U.S. Patent Application No. 09/346,492, filed June 30, 1999, and is related to PCT/US00/18061, filed 6/30/00.

TECHNICAL FIELD OF THE INVENTION

The present invention relates generally to therapy and diagnosis of cancer, such as lung cancer. The invention is more specifically related to polypeptides comprising at least a portion of a lung tumor protein, and to polynucleotides encoding such polypeptides. Such polypeptides and polynucleotides may be used in compositions for prevention and treatment of lung cancer, and for the diagnosis and monitoring of such cancers.

BACKGROUND OF THE INVENTION

Cancer is a significant health problem throughout the world. Although advances have been made in detection and therapy of cancer, no vaccine or other universally successful method for prevention or treatment is currently available. Current

therapies, which are generally based on a combination of chemotherapy or surgery and radiation, continue to prove inadequate in many patients.

Lung cancer is the primary cause of cancer death among both men and women in the U.S., with an estimated 172,000 new cases being reported in 1994. The five-year survival rate among all lung cancer patients, regardless of the stage of disease at diagnosis, is only 13%. This contrasts with a five-year survival rate of 46% among cases detected while the disease is still localized. However, only 16% of lung cancers are discovered before the disease has spread.

Early detection is difficult since clinical symptoms are often not seen until the disease has reached an advanced stage. Currently, diagnosis is aided by the use of chest x-rays, analysis of the type of cells contained in sputum and fiberoptic examination of the bronchial passages. Treatment regimens are determined by the type and stage of the cancer, and include surgery, radiation therapy and/or chemotherapy.

In spite of considerable research into therapies for this and other cancers, lung cancer remains difficult to diagnose and treat effectively. Accordingly, there is a need in the art for improved methods for detecting and treating such cancers. The present invention fulfills these needs and further provides other related advantages.

SUMMARY OF THE INVENTION

Briefly stated, the present invention provides compositions and methods for the diagnosis and therapy of cancer, such as lung cancer. In one aspect, the present invention provides polypeptides comprising at least a portion of a lung tumor protein, or a variant thereof. Certain portions and other variants are immunogenic, such that the ability of the variant to react with antigen-specific antisera is not substantially diminished. Within certain embodiments, the polypeptide comprises a sequence that is encoded by a polynucleotide sequence selected from the group consisting of: (a) sequences recited in SEQ ID NO: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180,

181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808 and 810-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563, and 1669; (b) variants of a sequence recited in SEQ ID NO: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563, and 1669; and (c) complements of a sequence of (a) or (b). In specific embodiments, the polypeptides of the present invention comprise at least a portion of a tumor protein that includes an amino acid sequence selected from the group consisting of sequences recited in SEQ ID NO: 786, 787, 791, 793, 795, 797-799, 806, 809, 827, 1670-1675 and 1677-1678 and variants thereof.

The present invention further provides polynucleotides that encode a polypeptide as described above, or a portion thereof (such as a portion encoding at least 15 amino acid residues of a lung tumor protein), expression vectors comprising such polynucleotides and host cells transformed or transfected with such expression vectors.

Within other aspects, the present invention provides pharmaceutical compositions comprising a polypeptide or polynucleotide as described above and a physiologically acceptable carrier.

Within a related aspect of the present invention, vaccines, or immunogenic compositions, for prophylactic or therapeutic use are provided. Such vaccines comprise a polypeptide or polynucleotide as described above and an immunostimulant.

The present invention further provides pharmaceutical compositions that comprise: (a) an antibody or antigen-binding fragment thereof that specifically binds to a lung tumor protein; and (b) a physiologically acceptable carrier.

Within further aspects, the present invention provides pharmaceutical compositions comprising: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a pharmaceutically acceptable carrier or excipient. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B cells.

Within related aspects, vaccines, or immunogenic compositions, are provided that comprise: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) an immunostimulant.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides encoding such fusion proteins.

Within related aspects, pharmaceutical compositions comprising a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a physiologically acceptable carrier are provided.

Vaccines, or immunogenic compositions, are further provided, within other aspects, that comprise a fusion protein, or a polynucleotide encoding a fusion protein, in combination with an immunostimulant.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or immunogenic composition as recited above. The patient

may be afflicted with lung cancer, in which case the methods provide treatment for the disease, or patient considered at risk for such a disease may be treated prophylactically.

The present invention further provides, within other aspects, methods for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a lung tumor protein, wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the protein from the sample.

Within related aspects, methods are provided for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated as described above.

Methods are further provided, within other aspects, for stimulating and/or expanding T cells specific for a lung tumor protein, comprising contacting T cells with one or more of: (i) a polypeptide as described above; (ii) a polynucleotide encoding such a polypeptide; and/or (iii) an antigen presenting cell that expresses such a polypeptide; under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells. Isolated T cell populations comprising T cells prepared as described above are also provided.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population as described above.

The present invention further provides methods for inhibiting the development of a cancer in a patient, comprising the steps of: (a) incubating $CD4^+$ and/or $CD8^+$ T cells isolated from a patient with one or more of: (i) a polypeptide comprising at least an immunogenic portion of a lung tumor protein; (ii) a polynucleotide encoding such a polypeptide; and (iii) an antigen-presenting cell that expressed such a polypeptide; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient. Proliferated cells may, but need not, be cloned prior to administration to the patient.

Within further aspects, the present invention provides methods for determining the presence or absence of a cancer in a patient, comprising: (a) contacting a biological sample obtained from a patient with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and (c) comparing the amount of polypeptide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within preferred embodiments, the binding agent is an antibody, more preferably a monoclonal antibody. The cancer may be lung cancer.

The present invention also provides, within other aspects, methods for monitoring the progression of a cancer in a patient. Such methods comprise the steps of: (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polypeptide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

The present invention further provides, within other aspects, methods for determining the presence or absence of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a lung tumor protein; (b) detecting in the sample a level of a polynucleotide, preferably mRNA, that hybridizes to the oligonucleotide; and (c) comparing the level of polynucleotide that hybridizes to the oligonucleotide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within certain embodiments, the amount of mRNA is detected via polymerase chain reaction using, for example, at least one oligonucleotide primer that hybridizes to a polynucleotide encoding a polypeptide as recited above, or a complement of such a polynucleotide. Within other embodiments, the amount of mRNA is detected using a hybridization technique, employing an

oligonucleotide probe that hybridizes to a polynucleotide that encodes a polypeptide as recited above, or a complement of such a polynucleotide.

In related aspects, methods are provided for monitoring the progression of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a lung tumor protein; (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polynucleotide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

Within further aspects, the present invention provides antibodies, such as monoclonal antibodies, that bind to a polypeptide as described above, as well as diagnostic kits comprising such antibodies. Diagnostic kits comprising one or more oligonucleotide probes or primers as described above are also provided.

These and other aspects of the present invention will become apparent upon reference to the following detailed description. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

SEQUENCE IDENTIFIERS

SEQ ID NO: 1 is the determined cDNA sequence for clone #19038, also referred to as L845P.

SEQ ID NO: 2 is the determined cDNA sequence for clone #19036.

SEQ ID NO: 3 is the determined cDNA sequence for clone #19034.

SEQ ID NO: 4 is the determined cDNA sequence for clone #19033.

SEQ ID NO: 5 is the determined cDNA sequence for clone #19032.

SEQ ID NO: 6 is the determined cDNA sequence for clone #19030, also referred to as L559S.

SEQ ID NO: 7 is the determined cDNA sequence for clone #19029.

SEQ ID NO: 8 is the determined cDNA sequence for clone #19025.

SEQ ID NO: 9 is the determined cDNA sequence for clone #19023.

SEQ ID NO: 10 is the determined cDNA sequence for clone #18929.

SEQ ID NO: 11 is the determined cDNA sequence for clone #19010.

SEQ ID NO: 12 is the determined cDNA sequence for clone #19009.

SEQ ID NO: 13 is the determined cDNA sequence for clones #19005, 19007, 19016 and 19017.

SEQ ID NO: 14 is the determined cDNA sequence for clone #19004.

SEQ ID NO: 15 is the determined cDNA sequence for clones #19002 and 18965.

SEQ ID NO: 16 is the determined cDNA sequence for clone #18998.

SEQ ID NO: 17 is the determined cDNA sequence for clone #18997.

SEQ ID NO: 18 is the determined cDNA sequence for clone #18996.

SEQ ID NO: 19 is the determined cDNA sequence for clone #18995.

SEQ ID NO: 20 is the determined cDNA sequence for clone #18994, also known as L846P.

SEQ ID NO: 21 is the determined cDNA sequence for clone #18992.

SEQ ID NO: 22 is the determined cDNA sequence for clone #18991.

SEQ ID NO: 23 is the determined cDNA sequence for clone #18990, also referred to as clone #20111.

SEQ ID NO: 24 is the determined cDNA sequence for clone #18987.

SEQ ID NO: 25 is the determined cDNA sequence for clone #18985, also referred as L839P.

SEQ ID NO: 26 is the determined cDNA sequence for clone #18984, also referred to as L847P.

SEQ ID NO: 27 is the determined cDNA sequence for clone #18983.

SEQ ID NO: 28 is the determined cDNA sequence for clones #18976 and 18980.

SEQ ID NO: 29 is the determined cDNA sequence for clone #18975.

SEQ ID NO: 30 is the determined cDNA sequence for clone #18974.

SEQ ID NO: 31 is the determined cDNA sequence for clone #18973.

SEQ ID NO: 32 is the determined cDNA sequence for clone #18972.

SEQ ID NO: 33 is the determined cDNA sequence for clone #18971, also referred to as L801P.

SEQ ID NO: 34 is the determined cDNA sequence for clone #18970.

SEQ ID NO: 35 is the determined cDNA sequence for clone #18966.

SEQ ID NO: 36 is the determined cDNA sequence for clones #18964, 18968 and 19039.

SEQ ID NO: 37 is the determined cDNA sequence for clone #18960.

SEQ ID NO: 38 is the determined cDNA sequence for clone #18959.

SEQ ID NO: 39 is the determined cDNA sequence for clones #18958 and 18982.

SEQ ID NO: 40 is the determined cDNA sequence for clones #18956 and 19015.

SEQ ID NO: 41 is the determined cDNA sequence for clone #18954, also referred to L848P.

SEQ ID NO: 42 is the determined cDNA sequence for clone #18951.

SEQ ID NO: 43 is the determined cDNA sequence for clone #18950.

SEQ ID NO: 44 is the determined cDNA sequence for clones #18949 and 19024, also referred to as L844P.

SEQ ID NO: 45 is the determined cDNA sequence for clone #18948.

SEQ ID NO: 46 is the determined cDNA sequence for clone #18947, also referred to as L840P.

SEQ ID NO: 47 is the determined cDNA sequence for clones #18946, 18953, 18969 and 19027.

SEQ ID NO: 48 is the determined cDNA sequence for clone #18942.

SEQ ID NO: 49 is the determined cDNA sequence for clone #18940, 18962, 18963, 19006, 19008, 19000, and 19031.

SEQ ID NO: 50 is the determined cDNA sequence for clone #18939.

SEQ ID NO: 51 is the determined cDNA sequence for clones #18938 and 18952.

SEQ ID NO: 52 is the determined cDNA sequence for clone #18938.

SEQ ID NO: 53 is the determined cDNA sequence for clone #18937.

SEQ ID NO: 54 is the determined cDNA sequence for clones #18934, 18935, 18993 and 19022, also referred to as L548S.

SEQ ID NO: 55 is the determined cDNA sequence for clone #18932.

SEQ ID NO: 56 is the determined cDNA sequence for clones #18931 and 18936.

SEQ ID NO: 57 is the determined cDNA sequence for clone #18930.

SEQ ID NO: 58 is the determined cDNA sequence for clone #19014, also referred to as L773P.

SEQ ID NO: 59 is the determined cDNA sequence for clone #19127.

SEQ ID NO: 60 is the determined cDNA sequence for clones #19057 and 19064.

SEQ ID NO: 61 is the determined cDNA sequence for clone #19122.

SEQ ID NO: 62 is the determined cDNA sequence for clones #19120 and 18121.

SEQ ID NO: 63 is the determined cDNA sequence for clone #19118.

SEQ ID NO: 64 is the determined cDNA sequence for clone #19117.

SEQ ID NO: 65 is the determined cDNA sequence for clone #19116.

SEQ ID NO: 66 is the determined cDNA sequence for clone #19114.

SEQ ID NO: 67 is the determined cDNA sequence for clone #19112, also known as L561S.

SEQ ID NO: 68 is the determined cDNA sequence for clone #19110.

SEQ ID NO: 69 is the determined cDNA sequence for clone #19107, also referred to as L552S.

SEQ ID NO: 70 is the determined cDNA sequence for clone #19106, also referred to as L547S.

SEQ ID NO: 71 is the determined cDNA sequence for clones #19105 and 19111.

SEQ ID NO: 72 is the determined cDNA sequence for clone #19099.

SEQ ID NO: 73 is the determined cDNA sequence for clones #19095, 19104 and 19125, also referred to as L549S.

SEQ ID NO: 74 is the determined cDNA sequence for clone #19094.

SEQ ID NO: 75 is the determined cDNA sequence for clones #19089 and 19101.

SEQ ID NO: 76 is the determined cDNA sequence for clone #19088.

SEQ ID NO: 77 is the determined cDNA sequence for clones #19087, 19092, 19096, 19100 and 19119.

SEQ ID NO: 78 is the determined cDNA sequence for clone #19086.

SEQ ID NO: 79 is the determined cDNA sequence for clone #19085, also referred to as L550S.

SEQ ID NO: 80 is the determined cDNA sequence for clone #19084, also referred to as clone #19079.

SEQ ID NO: 81 is the determined cDNA sequence for clone #19082.

SEQ ID NO: 82 is the determined cDNA sequence for clone #19080.

SEQ ID NO: 83 is the determined cDNA sequence for clone #19077.

SEQ ID NO: 84 is the determined cDNA sequence for clone #19076, also referred to as L551S.

SEQ ID NO: 85 is the determined cDNA sequence for clone #19074, also referred to as clone #20102.

SEQ ID NO: 86 is the determined cDNA sequence for clone #19073, also referred to as L560S.

SEQ ID NO: 87 is the determined cDNA sequence for clones #19072 and 19115.

SEQ ID NO: 88 is the determined cDNA sequence for clone #19071.

SEQ ID NO: 89 is the determined cDNA sequence for clone #19070.

SEQ ID NO: 90 is the determined cDNA sequence for clone #19069.

SEQ ID NO: 91 is the determined cDNA sequence for clone #19068, also referred to L563S.

SEQ ID NO: 92 is the determined cDNA sequence for clone #19066.

SEQ ID NO: 93 is the determined cDNA sequence for clone #19065.

SEQ ID NO: 94 is the determined cDNA sequence for clone #19063.

SEQ ID NO: 95 is the determined cDNA sequence for clones #19061, 19081, 19108 and 19109.

SEQ ID NO: 96 is the determined cDNA sequence for clones #19060, 19067 and 19083, also referred to as L548S.

SEQ ID NO: 97 is the determined cDNA sequence for clones #19059 and 19062.

SEQ ID NO: 98 is the determined cDNA sequence for clone #19058.

SEQ ID NO: 99 is the determined cDNA sequence for clone #19124.

SEQ ID NO: 100 is the determined cDNA sequence for clone #18929.

SEQ ID NO: 101 is the determined cDNA sequence for clone #18422.

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SEQ ID NO: 104 is the determined cDNA sequence for clone #18433.

SEQ ID NO: 105 is the determined cDNA sequence for clone #18444.

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SEQ ID NO: 123 is the determined cDNA sequence for clone #20652.

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SEQ ID NO: 149 is the determined cDNA sequence for clone #19131.1.

SEQ ID NO: 150 is the determined cDNA sequence for clone #19132.2.

SEQ ID NO: 151 is the determined cDNA sequence for clone #19133.

SEQ ID NO: 152 is the determined cDNA sequence for clone #19134.2.

SEQ ID NO: 153 is the determined cDNA sequence for clone #19135.2.

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SEQ ID NO: 155 is a first determined cDNA sequence for clone #19138.1.

SEQ ID NO: 156 is a second determined cDNA sequence for clone #19138.2.

SEQ ID NO: 157 is the determined cDNA sequence for clone #19139.

SEQ ID NO: 158 is a first determined cDNA sequence for clone #19140.1.

SEQ ID NO: 159 is a second determined cDNA sequence for clone #19140.2.

SEQ ID NO: 160 is the determined cDNA sequence for clone #19141.

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SEQ ID NO: 162 is the determined cDNA sequence for clone #19144.

SEQ ID NO: 163 is a first determined cDNA sequence for clone #19145.1.

SEQ ID NO: 164 is a second determined cDNA sequence for clone #19145.2.

SEQ ID NO: 165 is the determined cDNA sequence for clone #19146.

SEQ ID NO: 166 is the determined cDNA sequence for clone #19149.1.

SEQ ID NO: 167 is the determined cDNA sequence for clone #19152.

SEQ ID NO: 168 is a first determined cDNA sequence for clone #19153.1.

SEQ ID NO: 169 is a second determined cDNA sequence for clone #19153.2.

SEQ ID NO: 170 is the determined cDNA sequence for clone #19155.

SEQ ID NO: 171 is the determined cDNA sequence for clone #19157.

SEQ ID NO: 172 is the determined cDNA sequence for clone #19159.

SEQ ID NO: 173 is the determined cDNA sequence for clone #19160.

SEQ ID NO: 174 is a first determined cDNA sequence for clone #19161.1.

SEQ ID NO: 175 is a second determined cDNA sequence for clone #19161.2.

SEQ ID NO: 176 is the determined cDNA sequence for clone #19162.1.

SEQ ID NO: 177 is the determined cDNA sequence for clone #19166.

SEQ ID NO: 178 is the determined cDNA sequence for clone #19169.

SEQ ID NO: 179 is the determined cDNA sequence for clone #19171.

SEQ ID NO: 180 is a first determined cDNA sequence for clone #19173.1.

SEQ ID NO: 181 is a second determined cDNA sequence for clone #19173.2.

SEQ ID NO: 182 is the determined cDNA sequence for clone #19174.1.

SEQ ID NO: 183 is the determined cDNA sequence for clone #19175.

SEQ ID NO: 184 is the determined cDNA sequence for clone #19177.

SEQ ID NO: 185 is the determined cDNA sequence for clone #19178.

SEQ ID NO: 186 is the determined cDNA sequence for clone #19179.1.

SEQ ID NO: 187 is the determined cDNA sequence for clone #19179.2.

SEQ ID NO: 188 is the determined cDNA sequence for clone #19180.

SEQ ID NO: 189 is a first determined cDNA sequence for clone #19182.1.

SEQ ID NO: 190 is a second determined cDNA sequence for clone #19182.2.

SEQ ID NO: 191 is the determined cDNA sequence for clone #19183.1.

SEQ ID NO: 192 is the determined cDNA sequence for clone #19185.1.

SEQ ID NO: 193 is the determined cDNA sequence for clone #19187.

SEQ ID NO: 194 is the determined cDNA sequence for clone #19188.

SEQ ID NO: 195 is the determined cDNA sequence for clone #19190.

SEQ ID NO: 196 is the determined cDNA sequence for clone #19191.

SEQ ID NO: 197 is the determined cDNA sequence for clone #19192.

SEQ ID NO: 198 is the determined cDNA sequence for clone #19193.

SEQ ID NO: 199 is a first determined cDNA sequence for clone #19194.1.

SEQ ID NO: 200 is a second determined cDNA sequence for clone #19194.2.

SEQ ID NO: 201 is the determined cDNA sequence for clone #19197.

SEQ ID NO: 202 is a first determined cDNA sequence for clone #19200.1.

SEQ ID NO: 203 is a second determined cDNA sequence for clone #19200.2.

SEQ ID NO: 204 is the determined cDNA sequence for clone #19202.

SEQ ID NO: 205 is a first determined cDNA sequence for clone #19204.1.

SEQ ID NO: 206 is a second determined cDNA sequence for clone #19204.2.

SEQ ID NO: 207 is the determined cDNA sequence for clone #19205.

SEQ ID NO: 208 is a first determined cDNA sequence for clone #19206.1.

SEQ ID NO: 209 is a second determined cDNA sequence for clone #19206.2.

SEQ ID NO: 210 is the determined cDNA sequence for clone #19207.

SEQ ID NO: 211 is the determined cDNA sequence for clone #19208.

SEQ ID NO: 212 is a first determined cDNA sequence for clone #19211.1.

SEQ ID NO: 213 is a second determined cDNA sequence for clone #19211.2.

SEQ ID NO: 214 is a first determined cDNA sequence for clone #19214.1.

SEQ ID NO: 215 is a second determined cDNA sequence for clone #19214.2.

SEQ ID NO: 216 is the determined cDNA sequence for clone #19215.

SEQ ID NO: 217 is a first determined cDNA sequence for clone #19217. 2.

SEQ ID NO: 218 is a second determined cDNA sequence for clone #19217.2.

SEQ ID NO: 219 is a first determined cDNA sequence for clone #19218.1.

SEQ ID NO: 220 is a second determined cDNA sequence for clone #19218.2.

SEQ ID NO: 221 is a first determined cDNA sequence for clone #19220.1.

SEQ ID NO: 222 is a second determined cDNA sequence for clone #19220.2.

SEQ ID NO: 223 is the determined cDNA sequence for clone #22015.

SEQ ID NO: 224 is the determined cDNA sequence for clone #22017.

SEQ ID NO: 225 is the determined cDNA sequence for clone #22019.

SEQ ID NO: 226 is the determined cDNA sequence for clone #22020.

SEQ ID NO: 227 is the determined cDNA sequence for clone #22023.

SEQ ID NO: 228 is the determined cDNA sequence for clone #22026.

SEQ ID NO: 229 is the determined cDNA sequence for clone #22027.

SEQ ID NO: 230 is the determined cDNA sequence for clone #22028.

SEQ ID NO: 231 is the determined cDNA sequence for clone #22032.

SEQ ID NO: 232 is the determined cDNA sequence for clone #22037.

SEQ ID NO: 233 is the determined cDNA sequence for clone #22045.

SEQ ID NO: 234 is the determined cDNA sequence for clone #22048.

SEQ ID NO: 235 is the determined cDNA sequence for clone #22050.

SEQ ID NO: 236 is the determined cDNA sequence for clone #22052.

SEQ ID NO: 237 is the determined cDNA sequence for clone #22053.

SEQ ID NO: 238 is the determined cDNA sequence for clone #22057.

SEQ ID NO: 239 is the determined cDNA sequence for clone #22066.

SEQ ID NO: 240 is the determined cDNA sequence for clone #22077.

SEQ ID NO: 241 is the determined cDNA sequence for clone #22085.

SEQ ID NO: 242 is the determined cDNA sequence for clone #22105.

SEQ ID NO: 243 is the determined cDNA sequence for clone #22108.

SEQ ID NO: 244 is the determined cDNA sequence for clone #22109.

SEQ ID NO: 245 is the determined cDNA sequence for clone #24842.

SEQ ID NO: 246 is the determined cDNA sequence for clone #24843.

SEQ ID NO: 247 is the determined cDNA sequence for clone #24845.

SEQ ID NO: 248 is the determined cDNA sequence for clone #24851.

SEQ ID NO: 249 is the determined cDNA sequence for clone #24852.

SEQ ID NO: 250 is the determined cDNA sequence for clone #24853.

SEQ ID NO: 251 is the determined cDNA sequence for clone #24854.

SEQ ID NO: 252 is the determined cDNA sequence for clone #24855.

SEQ ID NO: 253 is the determined cDNA sequence for clone #24860.

SEQ ID NO: 254 is the determined cDNA sequence for clone #24864.

SEQ ID NO: 255 is the determined cDNA sequence for clone #24866.

SEQ ID NO: 256 is the determined cDNA sequence for clone #24867.

SEQ ID NO: 257 is the determined cDNA sequence for clone #24868.

SEQ ID NO: 258 is the determined cDNA sequence for clone #24869.

SEQ ID NO: 259 is the determined cDNA sequence for clone #24870.

SEQ ID NO: 260 is the determined cDNA sequence for clone #24872.

SEQ ID NO: 261 is the determined cDNA sequence for clone #24873.

SEQ ID NO: 262 is the determined cDNA sequence for clone #24875.

SEQ ID NO: 263 is the determined cDNA sequence for clone #24882.

SEQ ID NO: 264 is the determined cDNA sequence for clone #24885.

SEQ ID NO: 265 is the determined cDNA sequence for clone #24886.

SEQ ID NO: 266 is the determined cDNA sequence for clone #24887.

SEQ ID NO: 267 is the determined cDNA sequence for clone #24888.

SEQ ID NO: 268 is the determined cDNA sequence for clone #24890.

SEQ ID NO: 269 is the determined cDNA sequence for clone #24896.

SEQ ID NO: 270 is the determined cDNA sequence for clone #24897.

SEQ ID NO: 271 is the determined cDNA sequence for clone #24899.

SEQ ID NO: 272 is the determined cDNA sequence for clone #24901.

SEQ ID NO: 273 is the determined cDNA sequence for clone #24902.

SEQ ID NO: 274 is the determined cDNA sequence for clone #24906.

SEQ ID NO: 275 is the determined cDNA sequence for clone #24912.

SEQ ID NO: 276 is the determined cDNA sequence for clone #24913.

SEQ ID NO: 277 is the determined cDNA sequence for clone #24920.

SEQ ID NO: 278 is the determined cDNA sequence for clone #24927.

SEQ ID NO: 279 is the determined cDNA sequence for clone #24930.

SEQ ID NO: 280 is the determined cDNA sequence for clone #26938.

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SEQ ID NO: 282 is the determined cDNA sequence for clone #26943.

SEQ ID NO: 283 is the determined cDNA sequence for clone #26948.

SEQ ID NO: 284 is the determined cDNA sequence for clone #26951.

SEQ ID NO: 285 is the determined cDNA sequence for clone #26955.

SEQ ID NO: 286 is the determined cDNA sequence for clone #26956.

SEQ ID NO: 287 is the determined cDNA sequence for clone #26959.

SEQ ID NO: 288 is the determined cDNA sequence for clone #26961.

SEQ ID NO: 289 is the determined cDNA sequence for clone #26962.

SEQ ID NO: 290 is the determined cDNA sequence for clone #26964.

SEQ ID NO: 291 is the determined cDNA sequence for clone #26966.

SEQ ID NO: 292 is the determined cDNA sequence for clone #26968.

SEQ ID NO: 293 is the determined cDNA sequence for clone #26972.

SEQ ID NO: 294 is the determined cDNA sequence for clone #26973.

SEQ ID NO: 295 is the determined cDNA sequence for clone #26974.

SEQ ID NO: 296 is the determined cDNA sequence for clone #26976.

SEQ ID NO: 297 is the determined cDNA sequence for clone #26977.

SEQ ID NO: 298 is the determined cDNA sequence for clone #26979.

SEQ ID NO: 299 is the determined cDNA sequence for clone #26980.

SEQ ID NO: 300 is the determined cDNA sequence for clone #26981.

SEQ ID NO: 301 is the determined cDNA sequence for clone #26984.

SEQ ID NO: 302 is the determined cDNA sequence for clone #26985.

SEQ ID NO: 303 is the determined cDNA sequence for clone #26986.

SEQ ID NO: 304 is the determined cDNA sequence for clone #26993.

SEQ ID NO: 305 is the determined cDNA sequence for clone #26994.

SEQ ID NO: 306 is the determined cDNA sequence for clone #26995.

SEQ ID NO: 307 is the determined cDNA sequence for clone #27003.

SEQ ID NO: 308 is the determined cDNA sequence for clone #27005.

SEQ ID NO: 309 is the determined cDNA sequence for clone #27010.

SEQ ID NO: 310 is the determined cDNA sequence for clone #27011.

SEQ ID NO: 311 is the determined cDNA sequence for clone #27013.

SEQ ID NO: 312 is the determined cDNA sequence for clone #27016

SEQ ID NO: 313 is the determined cDNA sequence for clone #27017.

SEQ ID NO: 314 is the determined cDNA sequence for clone #27019.

SEQ ID NO: 315 is the determined cDNA sequence for clone #27028.

SEQ ID NO: 316 is the full-length cDNA sequence for clone #19060.

SEQ ID NO: 317 is the full-length cDNA sequence for clone #18964.

SEQ ID NO: 318 is the full-length cDNA sequence for clone #18929.

SEQ ID NO: 319 is the full-length cDNA sequence for clone #18991.

SEQ ID NO: 320 is the full-length cDNA sequence for clone #18996.

SEQ ID NO: 321 is the full-length cDNA sequence for clone #18966.

SEQ ID NO: 322 is the full-length cDNA sequence for clone #18951.

SEQ ID NO: 323 is the full-length cDNA sequence for clone #18973 (also known as L516S).

SEQ ID NO: 324 is the amino acid sequence for clone #19060.

SEQ ID NO: 325 is the amino acid sequence for clone #19063.

SEQ ID NO: 326 is the amino acid sequence for clone #19077.

SEQ ID NO: 327 is the amino acid sequence for clone #19110.

SEQ ID NO: 328 is the amino acid sequence for clone #19122.

SEQ ID NO: 329 is the amino acid sequence for clone #19118.

SEQ ID NO: 330 is the amino acid sequence for clone #19080.

SEQ ID NO: 331 is the amino acid sequence for clone #19127.

SEQ ID NO: 332 is the amino acid sequence for clone #19117.

SEQ ID NO: 333 is the amino acid sequence for clone #19095, also referred to L549S.

SEQ ID NO: 334 is the amino acid sequence for clone #18964.

SEQ ID NO: 335 is the amino acid sequence for clone #18929.

SEQ ID NO: 336 is the amino acid sequence for clone #18991.

SEQ ID NO: 337 is the amino acid sequence for clone #18996.

SEQ ID NO: 338 is the amino acid sequence for clone #18966.

SEQ ID NO: 339 is the amino acid sequence for clone #18951.

SEQ ID NO: 340 is the amino acid sequence for clone #18973.

SEQ ID NO: 341 is the determined cDNA sequence for clone 26461.

SEQ ID NO: 342 is the determined cDNA sequence for clone 26462.

SEQ ID NO: 343 is the determined cDNA sequence for clone 26463.

SEQ ID NO: 344 is the determined cDNA sequence for clone 26464.

SEQ ID NO: 345 is the determined cDNA sequence for clone 26465.

SEQ ID NO: 346 is the determined cDNA sequence for clone 26466.

SEQ ID NO: 347 is the determined cDNA sequence for clone 26467.

SEQ ID NO: 348 is the determined cDNA sequence for clone 26468.

SEQ ID NO: 349 is the determined cDNA sequence for clone 26469.

SEQ ID NO: 350 is the determined cDNA sequence for clone 26470.

SEQ ID NO: 351 is the determined cDNA sequence for clone 26471.

SEQ ID NO: 352 is the determined cDNA sequence for clone 26472.

SEQ ID NO: 353 is the determined cDNA sequence for clone 26474.

SEQ ID NO: 354 is the determined cDNA sequence for clone 26475.

SEQ ID NO: 355 is the determined cDNA sequence for clone 26476.

SEQ ID NO: 356 is the determined cDNA sequence for clone 26477.

SEQ ID NO: 357 is the determined cDNA sequence for clone 26478.

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SEQ ID NO: 359 is the determined cDNA sequence for clone 26480.

SEQ ID NO: 360 is the determined cDNA sequence for clone 26481.

SEQ ID NO: 361 is the determined cDNA sequence for clone 26482

SEQ ID NO: 362 is the determined cDNA sequence for clone 26483.

SEQ ID NO: 363 is the determined cDNA sequence for clone 26484.

SEQ ID NO: 364 is the determined cDNA sequence for clone 26485.

SEQ ID NO: 365 is the determined cDNA sequence for clone 26486.

SEQ ID NO: 366 is the determined cDNA sequence for clone 26487.

SEQ ID NO: 367 is the determined cDNA sequence for clone 26488.

SEQ ID NO: 368 is the determined cDNA sequence for clone 26489.

SEQ ID NO: 369 is the determined cDNA sequence for clone 26490.

SEQ ID NO: 370 is the determined cDNA sequence for clone 26491.

SEQ ID NO: 371 is the determined cDNA sequence for clone 26492.

SEQ ID NO: 372 is the determined cDNA sequence for clone 26493.

SEQ ID NO: 373 is the determined cDNA sequence for clone 26494.

SEQ ID NO: 374 is the determined cDNA sequence for clone 26495.

SEQ ID NO: 375 is the determined cDNA sequence for clone 26496.

SEQ ID NO: 376 is the determined cDNA sequence for clone 26497.

SEQ ID NO: 377 is the determined cDNA sequence for clone 26498.

SEQ ID NO: 378 is the determined cDNA sequence for clone 26499.

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SEQ ID NO: 380 is the determined cDNA sequence for clone 26501.

SEQ ID NO: 381 is the determined cDNA sequence for clone 26502.

SEQ ID NO: 382 is the determined cDNA sequence for clone 26503.

SEQ ID NO: 383 is the determined cDNA sequence for clone 26504.

SEQ ID NO: 384 is the determined cDNA sequence for clone 26505.

SEQ ID NO: 385 is the determined cDNA sequence for clone 26506.

SEQ ID NO: 386 is the determined cDNA sequence for clone 26507.

SEQ ID NO: 387 is the determined cDNA sequence for clone 26508.

SEQ ID NO: 388 is the determined cDNA sequence for clone 26509.

SEQ ID NO: 389 is the determined cDNA sequence for clone 26511.

SEQ ID NO: 390 is the determined cDNA sequence for clone 26513.

SEQ ID NO: 391 is the determined cDNA sequence for clone 26514.

SEQ ID NO: 392 is the determined cDNA sequence for clone 26515.

SEQ ID NO: 393 is the determined cDNA sequence for clone 26516.

SEQ ID NO: 394 is the determined cDNA sequence for clone 26517.

SEQ ID NO: 395 is the determined cDNA sequence for clone 26518.

SEQ ID NO: 396 is the determined cDNA sequence for clone 26519.

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SEQ ID NO: 400 is the determined cDNA sequence for clone 26523.

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SEQ ID NO: 404 is the determined cDNA sequence for clone 26528.

SEQ ID NO: 405 is the determined cDNA sequence for clone 26529.

SEQ ID NO: 406 is the determined cDNA sequence for clone 26530.

SEQ ID NO: 407 is the determined cDNA sequence for clone 26532.

SEQ ID NO: 408 is the determined cDNA sequence for clone 26533.

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SEQ ID NO: 410 is the determined cDNA sequence for clone 26535.

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SEQ ID NO: 413 is the determined cDNA sequence for clone 26538.

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SEQ ID NO: 416 is the determined cDNA sequence for clone 26542.

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SEQ ID NO: 421 is the determined cDNA sequence for clone 26548.

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SEQ ID NO: 425 is the determined cDNA sequence for clone 26552.

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SEQ ID NO: 427 is the determined cDNA sequence for clone 26554.

SEQ ID NO: 428 is the determined cDNA sequence for clone 26556.

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SEQ ID NO: 435 is the determined cDNA sequence for clone 27637.

SEQ ID NO: 436 is the determined cDNA sequence for clone 27638.

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SEQ ID NO: 447 is the determined cDNA sequence for clone 27652.

SEQ ID NO: 448 is the determined cDNA sequence for clone 27654.

SEQ ID NO: 449 is the determined cDNA sequence for clone 27655.

SEQ ID NO: 450 is the determined cDNA sequence for clone 27657.

SEQ ID NO: 451 is the determined cDNA sequence for clone 27659.

SEQ ID NO: 452 is the determined cDNA sequence for clone 27665.

SEQ ID NO: 453 is the determined cDNA sequence for clone 27666.

SEQ ID NO: 454 is the determined cDNA sequence for clone 27668.

SEQ ID NO: 455 is the determined cDNA sequence for clone 27670.

SEQ ID NO: 456 is the determined cDNA sequence for clone 27671.

SEQ ID NO: 457 is the determined cDNA sequence for clone 27672.

SEQ ID NO: 458 is the determined cDNA sequence for clone 27674.

SEQ ID NO: 459 is the determined cDNA sequence for clone 27677.

SEQ ID NO: 460 is the determined cDNA sequence for clone 27681.

SEQ ID NO: 461 is the determined cDNA sequence for clone 27682.

SEQ ID NO: 462 is the determined cDNA sequence for clone 27683.

SEQ ID NO: 463 is the determined cDNA sequence for clone 27686.

SEQ ID NO: 464 is the determined cDNA sequence for clone 27688.

SEQ ID NO: 465 is the determined cDNA sequence for clone 27689.

SEQ ID NO: 466 is the determined cDNA sequence for clone 27690.

SEQ ID NO: 467 is the determined cDNA sequence for clone 27693.

SEQ ID NO: 468 is the determined cDNA sequence for clone 27699.

SEQ ID NO: 469 is the determined cDNA sequence for clone 27700.

SEQ ID NO: 470 is the determined cDNA sequence for clone 27702.

SEQ ID NO: 471 is the determined cDNA sequence for clone 27705.

SEQ ID NO: 472 is the determined cDNA sequence for clone 27706.

SEQ ID NO: 473 is the determined cDNA sequence for clone 27707.

SEQ ID NO: 474 is the determined cDNA sequence for clone 27708.

SEQ ID NO: 475 is the determined cDNA sequence for clone 27709.

SEQ ID NO: 476 is the determined cDNA sequence for clone 27710.

SEQ ID NO: 477 is the determined cDNA sequence for clone 27711.

SEQ ID NO: 478 is the determined cDNA sequence for clone 27712.

SEQ ID NO: 479 is the determined cDNA sequence for clone 27713.

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SEQ ID NO: 481 is the determined cDNA sequence for clone 27715.

SEQ ID NO: 482 is the determined cDNA sequence for clone 27716.

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SEQ ID NO: 484 is the determined cDNA sequence for clone 27718.

SEQ ID NO: 485 is the determined cDNA sequence for clone 27719.

SEQ ID NO: 486 is the determined cDNA sequence for clone 27720.

SEQ ID NO: 487 is the determined cDNA sequence for clone 27722.

SEQ ID NO: 488 is the determined cDNA sequence for clone 27723.

SEQ ID NO: 489 is the determined cDNA sequence for clone 27724.

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SEQ ID NO: 491 is the determined cDNA sequence for clone 25015.

SEQ ID NO: 492 is the determined cDNA sequence for clone 25016.

SEQ ID NO: 493 is the determined cDNA sequence for clone 25017.

SEQ ID NO: 494 is the determined cDNA sequence for clone 25018

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SEQ ID NO: 497 is the determined cDNA sequence for clone 25034.

SEQ ID NO: 498 is the determined cDNA sequence for clone 25035.

SEQ ID NO: 499 is the determined cDNA sequence for clone 25036.

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SEQ ID NO: 501 is the determined cDNA sequence for clone 25038.

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SEQ ID NO: 505 is the determined cDNA sequence for clone 25043.

SEQ ID NO: 506 is the determined cDNA sequence for clone 25044.

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SEQ ID NO: 513 is the determined cDNA sequence for clone 25187.

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SEQ ID NO: 521 is the determined cDNA sequence for clone 25199.

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SEQ ID NO: 523 is the determined cDNA sequence for clone 25202.

SEQ ID NO: 524 is the determined cDNA sequence for clone 25364.

SEQ ID NO: 525 is the determined cDNA sequence for clone 25366.

SEQ ID NO: 526 is the determined cDNA sequence for clone 25367.

SEQ ID NO: 527 is the determined cDNA sequence for clone 25368.

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SEQ ID NO: 541 is the determined cDNA sequence for clone 25383.

SEQ ID NO: 542 is the determined cDNA sequence for clone 25385.

SEQ ID NO: 543 is the determined cDNA sequence for clone 25386.

SEQ ID NO: 544 is the determined cDNA sequence for clone 25387.

SEQ ID NO: 545 is the determined cDNA sequence for clone 26013.

SEQ ID NO: 546 is the determined cDNA sequence for clone 26014.

SEQ ID NO: 547 is the determined cDNA sequence for clone 26016.

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SEQ ID NO: 549 is the determined cDNA sequence for clone 26018.

SEQ ID NO: 550 is the determined cDNA sequence for clone 26019.

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SEQ ID NO: 553 is the determined cDNA sequence for clone 26022.

SEQ ID NO: 554 is the determined cDNA sequence for clone 26027.

SEQ ID NO: 555 is the determined cDNA sequence for clone 26197.

SEQ ID NO: 556 is the determined cDNA sequence for clone 26199.

SEQ ID NO: 557 is the determined cDNA sequence for clone 26201.

SEQ ID NO: 558 is the determined cDNA sequence for clone 26202.

SEQ ID NO: 559 is the determined cDNA sequence for clone 26203.

SEQ ID NO: 560 is the determined cDNA sequence for clone 26204.
SEQ ID NO: 561 is the determined cDNA sequence for clone 26205.
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SEQ ID NO: 563 is the determined cDNA sequence for clone 26208.
SEQ ID NO: 564 is the determined cDNA sequence for clone 26211.
SEQ ID NO: 565 is the determined cDNA sequence for clone 26212.
SEQ ID NO: 566 is the determined cDNA sequence for clone 26213.
SEQ ID NO: 567 is the determined cDNA sequence for clone 26214.
SEQ ID NO: 568 is the determined cDNA sequence for clone 26215.
SEQ ID NO: 569 is the determined cDNA sequence for clone 26216.
SEQ ID NO: 570 is the determined cDNA sequence for clone 26217.
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SEQ ID NO: 575 is the determined cDNA sequence for clone 26224.
SEQ ID NO: 576 is the determined cDNA sequence for clone 26225.
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SEQ ID NO: 578 is the determined cDNA sequence for clone 26227.
SEQ ID NO: 579 is the determined cDNA sequence for clone 26228.
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SEQ ID NO: 586 is the determined cDNA sequence for clone 26240.
SEQ ID NO: 587 is the determined cDNA sequence for clone 26241.
SEQ ID NO: 588 is the determined cDNA sequence for clone 26242.

SEQ ID NO: 589 is the determined cDNA sequence for clone 26246.

SEQ ID NO: 590 is the determined cDNA sequence for clone 26247.

SEQ ID NO: 591 is the determined cDNA sequence for clone 26248.

SEQ ID NO: 592 is the determined cDNA sequence for clone 26249.

SEQ ID NO: 593 is the determined cDNA sequence for clone 26250.

SEQ ID NO: 594 is the determined cDNA sequence for clone 26251.

SEQ ID NO: 595 is the determined cDNA sequence for clone 26252.

SEQ ID NO: 596 is the determined cDNA sequence for clone 26253.

SEQ ID NO: 597 is the determined cDNA sequence for clone 26254.

SEQ ID NO: 598 is the determined cDNA sequence for clone 26255.

SEQ ID NO: 599 is the determined cDNA sequence for clone 26256.

SEQ ID NO: 600 is the determined cDNA sequence for clone 26257.

SEQ ID NO: 601 is the determined cDNA sequence for clone 26259.

SEQ ID NO: 602 is the determined cDNA sequence for clone 26260.

SEQ ID NO: 603 is the determined cDNA sequence for clone 26261.

SEQ ID NO: 604 is the determined cDNA sequence for clone 26262.

SEQ ID NO: 605 is the determined cDNA sequence for clone 26263.

SEQ ID NO: 606 is the determined cDNA sequence for clone 26264.

SEQ ID NO: 607 is the determined cDNA sequence for clone 26265.

SEQ ID NO: 608 is the determined cDNA sequence for clone 26266.

SEQ ID NO: 609 is the determined cDNA sequence for clone 26268.

SEQ ID NO: 610 is the determined cDNA sequence for clone 26269.

SEQ ID NO: 611 is the determined cDNA sequence for clone 26271.

SEQ ID NO: 612 is the determined cDNA sequence for clone 26273.

SEQ ID NO: 613 is the determined cDNA sequence for clone 26810.

SEQ ID NO: 614 is the determined cDNA sequence for clone 26811.

SEQ ID NO: 615 is the determined cDNA sequence for clone 26812.1.

SEQ ID NO: 616 is the determined cDNA sequence for clone 26812.2.

SEQ ID NO: 617 is the determined cDNA sequence for clone 26813.

SEQ ID NO: 618 is the determined cDNA sequence for clone 26814.

SEQ ID NO: 619 is the determined cDNA sequence for clone 26815.

SEQ ID NO: 620 is the determined cDNA sequence for clone 26816.

SEQ ID NO: 621 is the determined cDNA sequence for clone 26818.

SEQ ID NO: 622 is the determined cDNA sequence for clone 26819.

SEQ ID NO: 623 is the determined cDNA sequence for clone 26820.

SEQ ID NO: 624 is the determined cDNA sequence for clone 26821.

SEQ ID NO: 625 is the determined cDNA sequence for clone 26822.

SEQ ID NO: 626 is the determined cDNA sequence for clone 26824.

SEQ ID NO: 627 is the determined cDNA sequence for clone 26825.

SEQ ID NO: 628 is the determined cDNA sequence for clone 26826.

SEQ ID NO: 629 is the determined cDNA sequence for clone 26827.

SEQ ID NO: 630 is the determined cDNA sequence for clone 26829.

SEQ ID NO: 631 is the determined cDNA sequence for clone 26830.

SEQ ID NO: 632 is the determined cDNA sequence for clone 26831.

SEQ ID NO: 633 is the determined cDNA sequence for clone 26832.

SEQ ID NO: 634 is the determined cDNA sequence for clone 26835.

SEQ ID NO: 635 is the determined cDNA sequence for clone 26836.

SEQ ID NO: 636 is the determined cDNA sequence for clone 26837.

SEQ ID NO: 637 is the determined cDNA sequence for clone 26839.

SEQ ID NO: 638 is the determined cDNA sequence for clone 26841.

SEQ ID NO: 639 is the determined cDNA sequence for clone 26843.

SEQ ID NO: 640 is the determined cDNA sequence for clone 26844.

SEQ ID NO: 641 is the determined cDNA sequence for clone 26845.

SEQ ID NO: 642 is the determined cDNA sequence for clone 26846.

SEQ ID NO: 643 is the determined cDNA sequence for clone 26847.

SEQ ID NO: 644 is the determined cDNA sequence for clone 26848.

SEQ ID NO: 645 is the determined cDNA sequence for clone 26849.

SEQ ID NO: 646 is the determined cDNA sequence for clone 26850.

SEQ ID NO: 647 is the determined cDNA sequence for clone 26851.

SEQ ID NO: 648 is the determined cDNA sequence for clone 26852.

SEQ ID NO: 649 is the determined cDNA sequence for clone 26853.

SEQ ID NO: 650 is the determined cDNA sequence for clone 26854.

SEQ ID NO: 651 is the determined cDNA sequence for clone 26856.

SEQ ID NO: 652 is the determined cDNA sequence for clone 26857.

SEQ ID NO: 653 is the determined cDNA sequence for clone 26858.

SEQ ID NO: 654 is the determined cDNA sequence for clone 26859.

SEQ ID NO: 655 is the determined cDNA sequence for clone 26860.

SEQ ID NO: 656 is the determined cDNA sequence for clone 26862.

SEQ ID NO: 657 is the determined cDNA sequence for clone 26863.

SEQ ID NO: 658 is the determined cDNA sequence for clone 26864.

SEQ ID NO: 659 is the determined cDNA sequence for clone 26865.

SEQ ID NO: 660 is the determined cDNA sequence for clone 26867.

SEQ ID NO: 661 is the determined cDNA sequence for clone 26868.

SEQ ID NO: 662 is the determined cDNA sequence for clone 26871.

SEQ ID NO: 663 is the determined cDNA sequence for clone 26873.

SEQ ID NO: 664 is the determined cDNA sequence for clone 26875.

SEQ ID NO: 665 is the determined cDNA sequence for clone 26876.

SEQ ID NO: 666 is the determined cDNA sequence for clone 26877.

SEQ ID NO: 667 is the determined cDNA sequence for clone 26878.

SEQ ID NO: 668 is the determined cDNA sequence for clone 26880.

SEQ ID NO: 669 is the determined cDNA sequence for clone 26882.

SEQ ID NO: 670 is the determined cDNA sequence for clone 26883.

SEQ ID NO: 671 is the determined cDNA sequence for clone 26884.

SEQ ID NO: 672 is the determined cDNA sequence for clone 26885.

SEQ ID NO: 673 is the determined cDNA sequence for clone 26886.

SEQ ID NO: 674 is the determined cDNA sequence for clone 26887.

SEQ ID NO: 675 is the determined cDNA sequence for clone 26888.

SEQ ID NO: 676 is the determined cDNA sequence for clone 26889.

SEQ ID NO: 677 is the determined cDNA sequence for clone 26890.

SEQ ID NO: 678 is the determined cDNA sequence for clone 26892.

SEQ ID NO: 679 is the determined cDNA sequence for clone 26894.

SEQ ID NO: 680 is the determined cDNA sequence for clone 26895.

SEQ ID NO: 681 is the determined cDNA sequence for clone 26897.

SEQ ID NO: 682 is the determined cDNA sequence for clone 26898.

SEQ ID NO: 683 is the determined cDNA sequence for clone 26899.

SEQ ID NO: 684 is the determined cDNA sequence for clone 26900.

SEQ ID NO: 685 is the determined cDNA sequence for clone 26901.

SEQ ID NO: 686 is the determined cDNA sequence for clone 26903.

SEQ ID NO: 687 is the determined cDNA sequence for clone 26905.

SEQ ID NO: 688 is the determined cDNA sequence for clone 26906.

SEQ ID NO: 689 is the determined cDNA sequence for clone 26708.

SEQ ID NO: 690 is the determined cDNA sequence for clone 26709.

SEQ ID NO: 691 is the determined cDNA sequence for clone 26710.

SEQ ID NO: 692 is the determined cDNA sequence for clone 26711.

SEQ ID NO: 693 is the determined cDNA sequence for clone 26712.

SEQ ID NO: 694 is the determined cDNA sequence for clone 26713.

SEQ ID NO: 695 is the determined cDNA sequence for clone 26714.

SEQ ID NO: 696 is the determined cDNA sequence for clone 26715.

SEQ ID NO: 697 is the determined cDNA sequence for clone 26716.

SEQ ID NO: 698 is the determined cDNA sequence for clone 26717.

SEQ ID NO: 699 is the determined cDNA sequence for clone 26718.

SEQ ID NO: 700 is the determined cDNA sequence for clone 26719.

SEQ ID NO: 701 is the determined cDNA sequence for clone 26720.

SEQ ID NO: 702 is the determined cDNA sequence for clone 26721.

SEQ ID NO: 703 is the determined cDNA sequence for clone 26722.

SEQ ID NO: 704 is the determined cDNA sequence for clone 26723.

SEQ ID NO: 705 is the determined cDNA sequence for clone 26724.

SEQ ID NO: 706 is the determined cDNA sequence for clone 26725.

SEQ ID NO: 707 is the determined cDNA sequence for clone 26726.

SEQ ID NO: 708 is the determined cDNA sequence for clone 26727.

SEQ ID NO: 709 is the determined cDNA sequence for clone 26728.

SEQ ID NO: 710 is the determined cDNA sequence for clone 26729.

SEQ ID NO: 711 is the determined cDNA sequence for clone 26730.

SEQ ID NO: 712 is the determined cDNA sequence for clone 26731.

SEQ ID NO: 713 is the determined cDNA sequence for clone 26732.

SEQ ID NO: 714 is the determined cDNA sequence for clone 26733.1.

SEQ ID NO: 715 is the determined cDNA sequence for clone 26733.2.

SEQ ID NO: 716 is the determined cDNA sequence for clone 26734.

SEQ ID NO: 717 is the determined cDNA sequence for clone 26735.

SEQ ID NO: 718 is the determined cDNA sequence for clone 26736.

SEQ ID NO: 719 is the determined cDNA sequence for clone 26737.

SEQ ID NO: 720 is the determined cDNA sequence for clone 26738.

SEQ ID NO: 721 is the determined cDNA sequence for clone 26739.

SEQ ID NO: 722 is the determined cDNA sequence for clone 26741.

SEQ ID NO: 723 is the determined cDNA sequence for clone 26742.

SEQ ID NO: 724 is the determined cDNA sequence for clone 26743.

SEQ ID NO: 725 is the determined cDNA sequence for clone 26744.

SEQ ID NO: 726 is the determined cDNA sequence for clone 26745.

SEQ ID NO: 727 is the determined cDNA sequence for clone 26746.

SEQ ID NO: 728 is the determined cDNA sequence for clone 26747.

SEQ ID NO: 729 is the determined cDNA sequence for clone 26748.

SEQ ID NO: 730 is the determined cDNA sequence for clone 26749.

SEQ ID NO: 731 is the determined cDNA sequence for clone 26750.

SEQ ID NO: 732 is the determined cDNA sequence for clone 26751.

SEQ ID NO: 733 is the determined cDNA sequence for clone 26752.

SEQ ID NO: 734 is the determined cDNA sequence for clone 26753.

SEQ ID NO: 735 is the determined cDNA sequence for clone 26754.

SEQ ID NO: 736 is the determined cDNA sequence for clone 26755.

SEQ ID NO: 737 is the determined cDNA sequence for clone 26756.

SEQ ID NO: 738 is the determined cDNA sequence for clone 26757.

SEQ ID NO: 739 is the determined cDNA sequence for clone 26758.

SEQ ID NO: 740 is the determined cDNA sequence for clone 26759.

SEQ ID NO: 741 is the determined cDNA sequence for clone 26760.

SEQ ID NO: 742 is the determined cDNA sequence for clone 26761.

SEQ ID NO: 743 is the determined cDNA sequence for clone 26762.

SEQ ID NO: 744 is the determined cDNA sequence for clone 26763.

SEQ ID NO: 745 is the determined cDNA sequence for clone 26764.

SEQ ID NO: 746 is the determined cDNA sequence for clone 26765.

SEQ ID NO: 747 is the determined cDNA sequence for clone 26766.

SEQ ID NO: 748 is the determined cDNA sequence for clone 26767.

SEQ ID NO: 749 is the determined cDNA sequence for clone 26768.

SEQ ID NO: 750 is the determined cDNA sequence for clone 26769.

SEQ ID NO: 751 is the determined cDNA sequence for clone 26770.

SEQ ID NO: 752 is the determined cDNA sequence for clone 26771.

SEQ ID NO: 753 is the determined cDNA sequence for clone 26772.

SEQ ID NO: 754 is the determined cDNA sequence for clone 26773.

SEQ ID NO: 755 is the determined cDNA sequence for clone 26774.

SEQ ID NO: 756 is the determined cDNA sequence for clone 26775.

SEQ ID NO: 757 is the determined cDNA sequence for clone 26776.

SEQ ID NO: 758 is the determined cDNA sequence for clone 26777.

SEQ ID NO: 759 is the determined cDNA sequence for clone 26778.

SEQ ID NO: 760 is the determined cDNA sequence for clone 26779.

SEQ ID NO: 761 is the determined cDNA sequence for clone 26781.

SEQ ID NO: 762 is the determined cDNA sequence for clone 26782.

SEQ ID NO: 763 is the determined cDNA sequence for clone 26783.

SEQ ID NO: 764 is the determined cDNA sequence for clone 26784.

SEQ ID NO: 765 is the determined cDNA sequence for clone 26785.

SEQ ID NO: 766 is the determined cDNA sequence for clone 26786.

SEQ ID NO: 767 is the determined cDNA sequence for clone 26787.

SEQ ID NO: 768 is the determined cDNA sequence for clone 26788.

SEQ ID NO: 769 is the determined cDNA sequence for clone 26790.

SEQ ID NO: 770 is the determined cDNA sequence for clone 26791.

SEQ ID NO: 771 is the determined cDNA sequence for clone 26792.

SEQ ID NO: 772 is the determined cDNA sequence for clone 26793.

SEQ ID NO: 773 is the determined cDNA sequence for clone 26794.

SEQ ID NO: 774 is the determined cDNA sequence for clone 26795.

SEQ ID NO: 775 is the determined cDNA sequence for clone 26796.

SEQ ID NO: 776 is the determined cDNA sequence for clone 26797.

SEQ ID NO: 777 is the determined cDNA sequence for clone 26798.

SEQ ID NO: 778 is the determined cDNA sequence for clone 26800.

SEQ ID NO: 779 is the determined cDNA sequence for clone 26801.

SEQ ID NO: 780 is the determined cDNA sequence for clone 26802.

SEQ ID NO: 781 is the determined cDNA sequence for clone 26803.

SEQ ID NO: 782 is the determined cDNA sequence for clone 26804.

SEQ ID NO: 783 is the amino acid sequence for L773P.

SEQ ID NO: 784 is the determined DNA sequence of the L773P expression construct.

SEQ ID NO: 785 is the determined DNA sequence of the L773PA expression construct.

SEQ ID NO: 786 is a predicted amino acid sequence for L552S.

SEQ ID NO: 787 is a predicted amino acid sequence for L840P.

SEQ ID NO: 788 is the full-length cDNA sequence for L548S.

SEQ ID NO: 789 is the amino acid sequence encoded by SEQ ID NO: 788.

SEQ ID NO: 790 is an extended cDNA sequence for L552S.

SEQ ID NO: 791 is the predicted amino acid sequence encoded by the cDNA sequence of SEQ ID NO: 790.

SEQ ID NO: 792 is the determined cDNA sequence for an isoform of L552S.

SEQ ID NO: 793 is the predicted amino acid sequence encoded by SEQ ID NO: 792.

SEQ ID NO: 794 is an extended cDNA sequence for L840P.

SEQ ID NO: 795 is the predicted amino acid sequence encoded by SEQ DI NO: 794.

SEQ ID NO: 796 is an extended cDNA sequence for L801P.

SEQ ID NO: 797 is a first predicted amino acid sequence encoded by SEQ ID NO: 796.

SEQ ID NO: 798 is a second predicted amino acid sequence encoded by SEQ ID NO: 796.

SEQ ID NO: 799 is a third predicted amino acid sequence encoded by SEQ ID NO: 796.

SEQ ID NO: 800 is the determined full-length sequence for L844P.

SEQ ID NO: 801 is the 5' consensus cDNA sequence for L551S.

SEQ ID NO: 802 is the 3' consensus cDNA sequence for L551S.

SEQ ID NO: 803 is the cDNA sequence for STY8.

SEQ ID NO: 804 is an extended cDNA sequence for L551S.

SEQ ID NO: 805 is the amino acid sequence for STY8.

SEQ ID NO: 806 is the extended amino acid sequence for L551S.

SEQ ID NO: 807 is the determined full-length cDNA sequence for L773P.

SEQ ID NO: 808 is the full-length cDNA sequence of L552S.

SEQ ID NO: 809 is the full-length amino acid sequence of L552S.

SEQ ID NO: 810 is the determined cDNA sequence of clone 50989.

SEQ ID NO: 811 is the determined cDNA sequence of clone 50990.

SEQ ID NO: 812 is the determined cDNA sequence of clone 50992.

SEQ ID NO: 813-824 are the determined cDNA sequences for clones isolated from lung tumor tissue.

SEQ ID NO: 825 is the determined cDNA sequence for the full-length L551S clone 54305.

SEQ ID NO: 826 is the determined cDNA sequence for the full-length L551S clone 54298.

SEQ ID NO: 827 is the full-length amino acid sequence for L551S.

Tables 1-6 contain the sequence identifiers for SEQ ID NO:878-1664.

Table 1A

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
828	R0126:A02	869	R0126:D12
829	R0126:A03	870	R0126:E01
830	R0126:A05	871	R0126:E02
831	R0126:A06	872	R0126:E03
832	R0126:A08	873	R0126:E04
833	R0126:A09	874	R0126:E05
834	R0126:A10	875	R0126:E06
835	R0126:A11	876	R0126:E07
836	R0126:A12	877	R0126:E08
837	R0126:B01	878	R0126:E09
838	R0126:B03	879	R0126:E10
839	R0126:B04	880	R0126:E11
840	R0126:B05	881	R0126:E12
841	R0126:B06	882	R0126:F01
842	R0126:B07	883	R0126:F02
843	R0126:B08	884	R0126:F03
844	R0126:B09	885	R0126:F04
845	R0126:B11	886	R0126:F05
846	R0126:B12	887	R0126:F06
847	R0126:C01	888	R0126:F07
848	R0126:C02	889	R0126:F08
849	R0126:C03	890	R0126:F10
850	R0126:C05	891	R0126:F11
851	R0126:C06	892	R0126:F12
852	R0126:C07	893	R0126:G01
853	R0126:C08	894	R0126:G02
854	R0126:C09	895	R0126:G03
855	R0126:C10	896	R0126:G04
856	R0126:C11	897	R0126:G05
857	R0126:C12	898	R0126:G06
858	R0126:D01	899	R0126:G07
859	R0126:D02	900	R0126:G09
860	R0126:D03	901	R0126:G10
861	R0126:D04	902	R0126:G11
862	R0126:D05	903	R0126:G12
863	R0126:D06	904	R0126:H01
864	R0126:D07	905	R0126:H02
865	R0126:D08	906	R0126:H03
866	R0126:D09	907	R0126:H04

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
867	R0126:D10	908	R0126:H05
868	R0126:D11	909	R0126:H06

Table 1B

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
910	R0126:H07	951	R0127:D10
911	R0126:H09	952	R0127:D11
912	R0126:H10	953	R0127:D12
913	R0126:H11	954	R0127:E02
914	R0127:A02	955	R0127:E03
915	R0127:A05	956	R0127:E04
916	R0127:A06	957	R0127:E05
917	R0127:A07	958	R0127:E06
918	R0127:A08	959	R0127:E07
919	R0127:A09	960	R0127:E08
920	R0127:A10	961	R0127:E09
921	R0127:A11	962	R0127:E10
922	R0127:A12	963	R0127:E11
923	R0127:B01	964	R0127:F01
924	R0127:B03	965	R0127:F02
925	R0127:B04	966	R0127:F03
926	R0127:B05	967	R0127:F04
927	R0127:B06	968	R0127:F05
928	R0127:B07	969	R0127:F06
929	R0127:B08	970	R0127:F07
930	R0127:B09	971	R0127:F08
931	R0127:B10	972	R0127:F10
932	R0127:B11	973	R0127:F11
933	R0127:B12	974	R0127:F12
934	R0127:C01	975	R0127:G01
935	R0127:C03	976	R0127:G02
936	R0127:C04	977	R0127:G03
937	R0127:C05	978	R0127:G04
938	R0127:C07	979	R0127:G05
939	R0127:C08	980	R0127:G06
940	R0127:C09	981	R0127:G07
941	R0127:C10	982	R0127:G08
942	R0127:C11	983	R0127:G09
943	R0127:D01	984	R0127:G10
944	R0127:D02	985	R0127:G11
945	R0127:D03	986	R0127:G12
946	R0127:D04	987	R0127:H01
947	R0127:D05	988	R0127:H02
948	R0127:D06	989	R0127:H03

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
949	R0127:D07	990	R0127:H04
950	R0127:D01	991	R0127:H05

Table 1C

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
992	R0127:H06	1034	R0128:D11
993	R0127:H07	1035	R0128:D12
994	R0127:H08	1036	R0128:E01
995	R1027:H09	1037	R0128:E02
996	R1027:H10	1038	R0128:E03
997	R1027:H11	1039	R0128:E04
998	R1028:A02	1040	R0128:E05
999	R1028:A05	1041	R0128:E06
1000	R1028:A06	1042	R0128:E07
1001	R1028:A07	1043	R0128:E08
1002	R1028:A08	1044	R0128:E09
1003	R1028:A09	1045	R0128:E10
1004	R1028:A10	1046	R0128:E12
1005	R1028:B01	1047	R0128:F01
1006	R1028:B02	1048	R0128:F02
1007	R1028:B03	1049	R0128:F03
1008	R1028:B04	1050	R0128:F04
1009	R1028:B05	1051	R0128:F06
1010	R1028:B08	1052	R0128:F07
1011	R1028:B09	1053	R0128:F08
1012	R1028:B10	1054	R0128:F09
1013	R1028:B11	1055	R0128:F10
1014	R1028:B12	1056	R0128:F12
1015	R1028:C01	1057	R0128:G01
1016	R1028:C03	1058	R0128:G02
1017	R1028:C04	1059	R0128:G03
1018	R1028:C05	1060	R0128:G04
1019	R1028:C06	1061	R0128:G05
1020	R1028:C07	1062	R0128:G06
1021	R1028:C08	1063	R0128:G07
1022	R1028:C10	1064	R0128:G09
1023	R1028:C11	1065	R0128:G10
1024	R1028:C12	1066	R0128:G11
1025	R1028:D01	1067	R0128:G12
1026	R1028:D02	1068	R0128:H01
1027	R1028:D04	1069	R0128:H02
1028	R1028:D05	1070	R0128:H03
1029	R1028:D06	1071	R0128:H04
1030	R1028:D07	1072	R0128:H05
1031	R1028:D08	1073	R0128:H06

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1032	R1028:D09	1074	R0128:H07
1033	R0128:D10	1075	R0128:H08

Table 1D

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1076	R0128:H09	1118	R0130:D12
1077	R0128:H10	1119	R0130:E01
1078	R0128:H11	1120	R0130:E02
1079	R0130:A02	1121	R0130:E03
1080	R0130:A05	1122	R0130:E04
1081	R0130:A06	1123	R0130:E05
1082	R0130:A08	1124	R0130:E06
1083	R0130:A09	1125	R0130:E07
1084	R0130:A10	1126	R0130:E08
1085	R0130:A11	1127	R0130:E09
1086	R0130:A12	1128	R0130:E10
1087	R0130:B01	1129	R0130:E11
1088	R0130:B02	1130	R0130:E12
1089	R0130:B03	1131	R0130:F02
1090	R0130:B04	1132	R0130:F03
1091	R0130:B05	1133	R0130:F05
1092	R0130:B06	1134	R0130:F06
1093	R0130:B08	1135	R0130:F07
1094	R0130:B09	1136	R0130:F08
1095	R0130:B10	1137	R0130:F09
1096	R0130:B11	1138	R0130:F10
1097	R0130:B12	1139	R0130:F11
1098	R0130:C02	1140	R0130:F12
1099	R0130:C03	1141	R0130:G01
1100	R0130:C04	1142	R0130:G02
1101	R0130:C05	1143	R0130:G03
1102	R0130:C06	1144	R0130:G04
1103	R0130:C07	1145	R0130:G05
1104	R0130:C08	1146	R0130:G06
1105	R0130:C09	1147	R0130:G07
1106	R0130:C10	1148	R0130:G08
1107	R0130:C11	1149	R0130:G09
1108	R0130:C12	1150	R0130:G10
1109	R0130:D02	1151	R0130:G11
1110	R0130:D03	1152	R0130:G12
1111	R0130:D04	1153	R0130:H01
1112	R0130:D05	1154	R0130:H02
1113	R0130:D06	1155	R0130:H04
1114	R0130:D07	1156	R0130:H05
1115	R0130:D09	1157	R0130:H06

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1116	R0130:D10	1158	R0130:H07
1117	R0130:D11	1159	R0130:H08

Table 1E

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1160	R0130:H09	1200	R0131:E01
1161	R0130:H10	1201	R0131:E02
1162	R0130:H11	1202	R0131:E03
1163	R0131:A02	1203	R0131:E04
1164	R0131:A05	1204	R0131:E06
1165	R0131:A06	1205	R0131:E07
1166	R0131:A07	1206	R0131:E08
1167	R0131:A08	1207	R0131:E10
1168	R0131:A09	1208	R0131:E11
1169	R0131:A11	1209	R0131:E12
1170	R0131:A12	1210	R0131:F02
1171	R0131:B02	1211	R0131:F04
1172	R0131:B03	1212	R0131:F05
1173	R0131:B04	1213	R0131:F06
1174	R0131:B05	1214	R0131:F07
1175	R0131:B07	1215	R0131:F08
1176	R0131:B08	1216	R0131:F09
1177	R0131:B09	1217	R0131:F10
1178	R0131:B10	1218	R0131:F11
1179	R0131:B11	1219	R0131:F12
1180	R0131:C01	1220	R0131:G01
1181	R0131:C02	1221	R0131:G02
1182	R0131:C03	1222	R0131:G03
1183	R0131:C04	1223	R0131:G04
1184	R0131:C06	1224	R0131:G05
1185	R0131:C07	1225	R0131:G06
1186	R0131:C08	1226	R0131:G07
1187	R0131:C10	1227	R0131:G08
1188	R0131:C11	1228	R0131:G09
1189	R0131:C12	1229	R0131:G10
1190	R0131:D02	1230	R0131:G11
1191	R0131:D03	1231	R0131:G12
1192	R0131:D04	1232	R0131:H01
1193	R0131:D05	1233	R0131:H02
1194	R0131:D06	1234	R0131:H05
1195	R0131:D07	1235	R0131:H06
1196	R0131:D09	1236	R0131:H07
1197	R0131:D10	1237	R0131:H08
1198	R0131:D11	1238	R0131:H09
1199	R0131:D12	1239	R0131:H11

Table 2:
Clone names for NSCLC-SQL1 and corresponding SEQ ID NOs

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1240	Contig 54		
1241	Contig 55		
1242	Contig 57		
1243	Contig 58		
1244	Contig 60		
1245	Contig 62		
1246	Contig 63		
1247	Contig 64		
1248	Contig 65		
1249	Contig 66		
1250	Contig 67		
1251	Contig 68		
1252	Contig 69		
1253	Contig 70		
1254	Contig 71		
1255	Contig 72		
1256	Contig 73		
1257	Contig 74		
1258	Contig 75		
1259	Contig 77		
1260	Contig 78		
1261	Contig 79		
1262	Contig 80		
1263	Contig 81		
1264	Contig 83		
1265	Contig 84		
1266	Contig 86		
1267	Contig 87		
1268	Contig 88		
1269	Contig 89		
1270	Contig 90		
1271	Contig 91		
1272	Contig 92		
1273	Contig 94		
1274	Contig 95		
1275	Contig 96		
1276	Contig 97		
1277	Contig 98		

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1278	Contig 99		
1279	Contig 100		

Table 3:
Clone names for NSCLC-SCLI and corresponding SEQ ID NOs

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1280	Contig 38	1320	Contig 82
1281	Contig 39		
1282	Contig 40		
1283	Contig 41		
1284	Contig 42		
1285	Contig 43		
1286	Contig 44		
1287	Contig 45		
1288	Contig 46		
1289	Contig 47		
1290	Contig 48		
1291	Contig 49		
1292	Contig 51		
1293	Contig 52		
1294	Contig 53		
1295	Contig 54		
1296	Contig 55		
1297	Contig 56		
1298	Contig 57		
1299	Contig 58		
1300	Contig 59		
1301	Contig 60		
1302	Contig 62		
1303	Contig 63		
1304	Contig 64		
1305	Contig 65		
1306	Contig 66		
1307	Contig 67		
1308	Contig 68		
1309	Contig 69		
1310	Contig 70		
1311	Contig 72		
1312	Contig 73		
1313	Contig 75		
1314	Contig 76		
1315	Contig 77		
1316	Contig 78		
1317	Contig 79		

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1318	Contig 80		
1319	Contig 81		

Table 4A:
Clone names for NSCLC-SCL3-SCL4 and corresponding SEQ ID NOs

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1321	Contig 94	1363	Contig 136
1322	Contig 95	1364	Contig 137
1323	Contig 96	1365	Contig 138
1324	Contig 97	1366	Contig 139
1325	Contig 98	1367	Contig 140
1326	Contig 99	1368	Contig 141
1327	Contig 100	1369	Contig 142
1328	Contig 101	1370	Contig 143
1329	Contig 102	1371	Contig 144
1330	Contig 103	1372	Contig 145
1331	Contig 104	1373	Contig 146
1332	Contig 105	1374	Contig 147
1333	Contig 106	1375	Contig 148
1334	Contig 107	1376	Contig 149
1335	Contig 108	1377	Contig 150
1336	Contig 109	1378	Contig 151
1337	Contig 110	1379	Contig 152
1338	Contig 111	1380	Contig 153
1339	Contig 112	1381	Contig 154
1340	Contig 113	1382	Contig 155
1341	Contig 114	1383	Contig 156
1342	Contig 115	1384	Contig 157
1343	Contig 116	1385	Contig 158
1344	Contig 117	1386	Contig 159
1345	Contig 118	1387	Contig 160
1346	Contig 119	1388	Contig 161
1347	Contig 120	1389	Contig 162
1348	Contig 121	1390	Contig 163
1349	Contig 122	1391	Contig 164
1350	Contig 123	1392	Contig 165
1351	Contig 124	1393	Contig 166
1352	Contig 125	1394	Contig 167
1353	Contig 126	1395	Contig 168
1354	Contig 127	1396	Contig 169
1355	Contig 128	1397	Contig 170
1356	Contig 129	1398	Contig 171
1357	Contig 130	1399	Contig 172
1358	Contig 131	1400	Contig 173
1359	Contig 132	1401	Contig 174

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1360	Contig 133	1402	Contig 175
1361	Contig 134	1403	Contig 176
1362	Contig 135		

Table 4B:
Clone names for NSCLC-SCL3-SCL4 and corresponding SEQ ID NOs

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1404	Contig 177		
1405	Contig 178		
1406	Contig 179		
1407	Contig 180		
1408	Contig 181		
1409	Contig 182		
1410	Contig 183		
1411	Contig 184		
1412	Contig 185		
1413	Contig 186		
1414	Contig 187		

Table 5:
Clone names for SCLC-SQL1 and corresponding SEQ ID NOs

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1415	Contig 17		
1416	Contig 18		
1417	Contig 20		
1418	Contig 23		
1419	Contig 24		
1420	Contig 25		
1421	Contig 26		
1422	Contig 27		
1423	Contig 28		
1424	Contig 29		
1425	Contig 30		
1426	Contig 31		
1427	Contig 20		
1428	Contig 21		
1429	Contig 22		
1430	Contig 23		
1431	Contig 24		
1432	Contig 25		
1433	Contig 26		
1434	Contig 27		
1435	Contig 28		
1436	Contig 29		
1437	Contig 30		
1438	Contig 31		
1439	Contig 32		
1440	Contig 33		
1441	Contig 34		
1442	Contig 35		
1443	Contig 36		
1444	Contig 37		
1445	Contig 38		

Table 6A:
Clone names for SCLC-SCL3-SCL4 and corresponding SEQ ID NOs

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1446	Contig 116	1488	Contig 160
1447	Contig 117	1489	Contig 161
1448	Contig 118	1490	Contig 162
1449	Contig 119	1491	Contig 163
1450	Contig 120	1492	Contig 164
1451	Contig 122	1493	Contig 165
1452	Contig 123	1494	Contig 166
1453	Contig 124	1495	Contig 167
1454	Contig 125	1496	Contig 168
1455	Contig 126	1497	Contig 169
1456	Contig 127	1498	Contig 170
1457	Contig 128	1499	Contig 171
1458	Contig 129	1500	Contig 172
1459	Contig 130	1501	Contig 173
1460	Contig 131	1502	Contig 174
1461	Contig 132	1503	Contig 175
1462	Contig 133	1504	Contig 176
1463	Contig 135	1505	Contig 177
1464	Contig 136	1506	Contig 178
1465	Contig 137	1507	Contig 179
1466	Contig 138	1508	Contig 181
1467	Contig 139 (L985P)	1509	Contig 182
1468	Contig 140	1510	Contig 183
1469	Contig 141	1511	Contig 184
1470	Contig 142	1512	Contig 185
1471	Contig 143	1513	Contig 186
1472	Contig 144	1514	Contig 187
1473	Contig 145	1515	Contig 189
1474	Contig 146	1516	Contig 190
1475	Contig 147	1517	Contig 191
1476	Contig 148	1518	Contig 192
1477	Contig 149	1519	Contig 193
1478	Contig 150	1520	Contig 194
1479	Contig 151	1521	Contig 195
1480	Contig 152	1522	Contig 196
1481	Contig 153	1523	Contig 197
1482	Contig 154	1524	Contig 198
1483	Contig 155	1525	Contig 199
1484	Contig 156	1526	Contig 200

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1485	Contig 157	1527	Contig 201
1486	Contig 158	1528	Contig 202
1487	Contig 159		

Table 6B:
Clone names for SCLC-SCL3-SCL4 and corresponding SEQ ID NOs

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1529	Contig 203		
1530	Contig 204		
1531	Contig 205		
1532	Contig 206		
1533	Contig 207		
1534	Contig 208		
1535	Contig 209		
1536	Contig 210		
1537	Contig 211		
1538	Contig 212		
1539	Contig 213		
1540	Contig 214		
1541	Contig 215		
1542	Contig 216		
1543	Contig 217		
1544	Contig 218		
1545	Contig 219		
1546	Contig 220		
1547	Contig 221		
1548	Contig 222		
1549	Contig 223		
1550	Contig 224		
1551	Contig 225		
1552	Contig 226		
1553	Contig 227		
1554	Contig 228		
1555	Contig 229		
1556	Contig 230		
1557	Contig 231		
1558	Contig 232		
1559	Contig 233		
1560	Contig 234		
1561	Contig 235		
1562	Contig 236		
1563	Contig 237		

Table 7.

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1564	R0124:E05	1609	R0129:D09
1565	R0124:E06	1610	R0129:D10
1566	R0124:E08	1611	R0129:D11
1567	R0124:F07	1612	R0129:E02
1568	R0124:F08	1613	R0129:E03
1569	R0124:F09	1614	R0129:E04
1570	R0124:G04	1615	R0129:E05
1571	R0129:A02	1616	R0129:E06
1572	R0129:A03	1617	R0129:E07
1573	R0129:A06	1618	R0129:E08
1574	R0129:A07	1619	R0129:E09
1575	R0129:A08	1620	R0129:E11
1576	R0129:A09	1621	R0129:E12
1577	R0129:A10	1622	R0129:F01
1578	R0129:A11	1623	R0129:F02
1579	R0129:A12	1624	R0129:F03
1580	R0129:B02	1625	R0129:F04
1581	R0129:B03	1626	R0129:F06
1582	R0129:B04	1627	R0129:F07
1583	R0129:B05	1628	R0129:F08
1584	R0129:B06	1629	R0129:F09
1585	R0129:B07	1630	R0129:F10
1586	R0129:B08	1631	R0129:F11
1587	R0129:B09	1632	R0129:F12
1588	R0129:B10	1633	R0129:G01
1589	R0129:B11	1634	R0129:G02
1590	R0129:B12	1635	R0129:G03
1591	R0129:C01	1636	R0129:G04
1592	R0129:C02	1637	R0129:G05
1593	R0129:C03	1638	R0129:G06
1594	R0129:C04	1639	R0129:G07
1595	R0129:C06	1640	R0129:G08
1596	R0129:C07	1641	R0129:G09
1597	R0129:C08	1642	R0129:G10
1598	R0129:C09	1643	R0129:G11
1599	R0129:C10	1644	R0129:G12
1600	R0129:C11	1645	R0129:H01
1601	R0129:C12	1646	R0129:H02
1602	R0129:D01	1647	R0129:H03
1603	R0129:D03	1648	R0129:H04

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1604	R0129:D04	1649	R0129:H05
1605	R0129:D05	1650	R0129:H08
1606	R0129:D06	1651	R0129:H09
1607	R0129:D07	1652	R0129:H10
1608	R0129:D08	1653	R0129:H11

Table 8.

SEQ ID NO	CLONE IDENTIFIER	SEQ ID NO	CLONE IDENTIFIER
1654	26484		
1655	26496		
1656	26517		
1657	26531		
1658	26022		
1659	26026		
1660	26810		
1661	26815		
1662	26869		
1663	26883		
1664	26902		

SEQ ID NO:1667 is the protein sequence of expressed recombinant L7548S.

SEQ ID NO:1668 is the cDNA sequence of expressed recombinant L7548S.

SEQ ID NO:1669 is the extended cDNA sequence of clone #18971 (L801P).

SEQ ID NO:1670 is the amino acid sequence of open reading frame ORF4 encoded by SEQ ID NO:1669.

SEQ ID NO:1671 is the amino acid sequence of open reading frame ORF5 encoded by SEQ ID NO:1669.

SEQ ID NO:1672 is the amino acid sequence of open reading frame ORF6 encoded by SEQ ID NO:1669.

SEQ ID NO:1673 is the amino acid sequence of open reading frame ORF7 encoded by SEQ ID NO:1669.

SEQ ID NO:1674 is the amino acid sequence of open reading frame ORF8 encoded by SEQ ID NO:1669.

SEQ ID NO:1675 is the amino acid sequence of open reading frame ORF9 encoded by SEQ ID NO:1669.

SEQ ID NO:1676 is the extended cDNA for contig 139 (SEQ ID NO:1467), also known as L985P.

SEQ ID NO:1677 is the L985P amino acid sequence encoded by SEQ ID NO: 1676.

SEQ ID NO: 1678 is the amino acid sequence of open reading frame ORF5X of SEQ ID NO:1669.

SEQ ID NO: 1679 is the amino acid sequence of an open reading frame for contig 139 (SEQ ID NO:1467).

DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for using the compositions, for example in the therapy and diagnosis of cancer, such as lung cancer. Certain illustrative compositions described herein include lung tumor polypeptides, polynucleotides encoding such polypeptides, binding agents such as antibodies, antigen presenting cells (APCs) and/or immune system cells (*e.g.,* T cells). A " lung tumor protein," as the term is used herein, refers generally to a protein that is expressed in lung tumor cells at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in a normal tissue, as determined using a representative assay provided herein. Certain lung tumor proteins are tumor proteins that react detectably (within an immunoassay, such as an ELISA or Western blot) with antisera of a patient afflicted with lung cancer.

Therefore, in accordance with the above, and as described further below, the present invention provides illustrative polynucleotide compositions having sequences set forth in SEQ ID NO: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319,

1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563 and 1669 illustrative polypeptide compositions having amino acid sequences set forth in SEQ ID NO: 786, 787, 791, 793, 795, 797-799, 806, 809, 827, 1670-1675 and 1677-1679, antibody compositions capable of binding such polypeptides, and numerous additional embodiments employing such compositions, for example in the detection, diagnosis and/or therapy of human lung cancer.

POLYNUCLEOTIDE COMPOSITIONS

As used herein, the terms "DNA segment" and “polynucleotide” refer to a DNA molecule that has been isolated free of total genomic DNA of a particular species. Therefore, a DNA segment encoding a polypeptide refers to a DNA segment that contains one or more coding sequences yet is substantially isolated away from, or purified free from, total genomic DNA of the species from which the DNA segment is obtained. Included within the terms "DNA segment" and “polynucleotide” are DNA segments and smaller fragments of such segments, and also recombinant vectors, including, for example, plasmids, cosmids, phagemids, phage, viruses, and the like.

As will be understood by those skilled in the art, the DNA segments of this invention can include genomic sequences, extra-genomic and plasmid-encoded sequences and smaller engineered gene segments that express, or may be adapted to express, proteins, polypeptides, peptides and the like. Such segments may be naturally isolated, or modified synthetically by the hand of man.

"Isolated,” as used herein, means that a polynucleotide is substantially away from other coding sequences, and that the DNA segment does not contain large portions of unrelated coding DNA, such as large chromosomal fragments or other functional genes or polypeptide coding regions. Of course, this refers to the DNA segment as originally

isolated, and does not exclude genes or coding regions later added to the segment by the hand of man.

As will be recognized by the skilled artisan, polynucleotides may be single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic, cDNA or synthetic) or RNA molecules. RNA molecules include HnRNA molecules, which contain introns and correspond to a DNA molecule in a one-to-one manner, and mRNA molecules, which do not contain introns. Additional coding or non-coding sequences may, but need not, be present within a polynucleotide of the present invention, and a polynucleotide may, but need not, be linked to other molecules and/or support materials.

Polynucleotides may comprise a native sequence (*i.e.,* an endogenous sequence that encodes a lung tumor protein or a portion thereof) or may comprise a variant, or a biological or antigenic functional equivalent of such a sequence. Polynucleotide variants may contain one or more substitutions, additions, deletions and/or insertions, as further described below, preferably such that the immunogenicity of the encoded polypeptide is not diminished, relative to a native tumor protein. The effect on the immunogenicity of the encoded polypeptide may generally be assessed as described herein. The term "variants" also encompasses homologous genes of xenogenic origin.

When comparing polynucleotide or polypeptide sequences, two sequences are said to be "identical" if the sequence of nucleotides or amino acids in the two sequences is the same when aligned for maximum correspondence, as described below. Comparisons between two sequences are typically performed by comparing the sequences over a comparison window to identify and compare local regions of sequence similarity. A "comparison window" as used herein, refers to a segment of at least about 20 contiguous positions, usually 30 to about 75, 40 to about 50, in which a sequence may be compared to a reference sequence of the same number of contiguous positions after the two sequences are optimally aligned.

Optimal alignment of sequences for comparison may be conducted using the Megalign program in the Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using default parameters. This program embodies several alignment

schemes described in the following references: Dayhoff, M.O. (1978) A model of evolutionary change in proteins – Matrices for detecting distant relationships. In Dayhoff, M.O. (ed.) Atlas of Protein Sequence and Structure, National Biomedical Research Foundation, Washington DC Vol. 5, Suppl. 3, pp. 345-358; Hein J. (1990) Unified Approach to Alignment and Phylogenes pp. 626-645 *Methods in Enzymology* vol. 183, Academic Press, Inc., San Diego, CA; Higgins, D.G. and Sharp, P.M. (1989) *CABIOS 5*:151-153; Myers, E.W. and Muller W. (1988) *CABIOS 4*:11-17; Robinson, E.D. (1971) *Comb. Theor 11*:105; Santou, N. Nes, M. (1987) *Mol. Biol. Evol. 4*:406-425; Sneath, P.H.A. and Sokal, R.R. (1973) *Numerical Taxonomy – the Principles and Practice of Numerical Taxonomy*, Freeman Press, San Francisco, CA; Wilbur, W.J. and Lipman, D.J. (1983) *Proc. Natl. Acad., Sci. USA 80*:726-730.

Alternatively, optimal alignment of sequences for comparison may be conducted by the local identity algorithm of Smith and Waterman (1981) *Add. APL. Math* 2:482, by the identity alignment algorithm of Needleman and Wunsch (1970) *J. Mol. Biol.* 48:443, by the search for similarity methods of Pearson and Lipman (1988) *Proc. Natl. Acad. Sci. USA* 85: 2444, by computerized implementations of these algorithms (GAP, BESTFIT, BLAST, FASTA, and TFASTA in the Wisconsin Genetics Software Package, Genetics Computer Group (GCG), 575 Science Dr., Madison, WI), or by inspection.

One preferred example of algorithms that are suitable for determining percent sequence identity and sequence similarity are the BLAST and BLAST 2.0 algorithms, which are described in Altschul *et al.* (1977) *Nucl. Acids Res.* 25:3389-3402 and Altschul *et al.* (1990) *J. Mol. Biol.* 215:403-410, respectively. BLAST and BLAST 2.0 can be used, for example with the parameters described herein, to determine percent sequence identity for the polynucleotides and polypeptides of the invention. Software for performing BLAST analyses is publicly available through the National Center for Biotechnology Information. In one illustrative example, cumulative scores can be calculated using, for nucleotide sequences, the parameters M (reward score for a pair of matching residues; always >0) and N (penalty score for mismatching residues; always <0). For amino acid sequences, a scoring matrix can be used to calculate the cumulative score.

Extension of the word hits in each direction are halted when: the cumulative alignment score falls off by the quantity X from its maximum achieved value; the cumulative score goes to zero or below, due to the accumulation of one or more negative-scoring residue alignments; or the end of either sequence is reached. The BLAST algorithm parameters W, T and X determine the sensitivity and speed of the alignment. The BLASTN program (for nucleotide sequences) uses as defaults a wordlength (W) of 11, and expectation (E) of 10, and the BLOSUM62 scoring matrix (see Henikoff and Henikoff (1989) *Proc. Natl. Acad. Sci. USA* 89:10915) alignments, (B) of 50, expectation (E) of 10, M=5, N=-4 and a comparison of both strands.

Preferably, the "percentage of sequence identity" is determined by comparing two optimally aligned sequences over a window of comparison of at least 20 positions, wherein the portion of the polynucleotide or polypeptide sequence in the comparison window may comprise additions or deletions (*i.e.,* gaps) of 20 percent or less, usually 5 to 15 percent, or 10 to 12 percent, as compared to the reference sequences (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleic acid bases or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the reference sequence (*i.e.,* the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

Therefore, the present invention encompasses polynucleotide and polypeptide sequences having substantial identity to the sequences disclosed herein, for example those comprising at least 50% sequence identity, preferably at least 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99% or higher, sequence identity compared to a polynucleotide or polypeptide sequence of this invention using the methods described herein, (*e.g.*, BLAST analysis using standard parameters, as described below). One skilled in this art will recognize that these values can be appropriately adjusted to determine corresponding identity of proteins encoded by two nucleotide

sequences by taking into account codon degeneracy, amino acid similarity, reading frame positioning and the like.

In additional embodiments, the present invention provides isolated polynucleotides and polypeptides comprising various lengths of contiguous stretches of sequence identical to or complementary to one or more of the sequences disclosed herein. For example, polynucleotides are provided by this invention that comprise at least about 15, 20, 30, 40, 50, 75, 100, 150, 200, 300, 400, 500 or 1000 or more contiguous nucleotides of one or more of the sequences disclosed herein as well as all intermediate lengths there between. It will be readily understood that "intermediate lengths", in this context, means any length between the quoted values, such as 16, 17, 18, 19, *etc.*; 21, 22, 23, *etc.*; 30, 31, 32, *etc.*; 50, 51, 52, 53, *etc.*; 100, 101, 102, 103, *etc.*; 150, 151, 152, 153, *etc.*; including all integers through 200-500; 500-1,000, and the like.

The polynucleotides of the present invention, or fragments thereof, regardless of the length of the coding sequence itself, may be combined with other DNA sequences, such as promoters, polyadenylation signals, additional restriction enzyme sites, multiple cloning sites, other coding segments, and the like, such that their overall length may vary considerably. It is therefore contemplated that a nucleic acid fragment of almost any length may be employed, with the total length preferably being limited by the ease of preparation and use in the intended recombinant DNA protocol. For example, illustrative DNA segments with total lengths of about 10,000, about 5000, about 3000, about 2,000, about 1,000, about 500, about 200, about 100, about 50 base pairs in length, and the like, (including all intermediate lengths) are contemplated to be useful in many implementations of this invention.

In other embodiments, the present invention is directed to polynucleotides that are capable of hybridizing under moderately stringent conditions to a polynucleotide sequence provided herein, or a fragment thereof, or a complementary sequence thereof. Hybridization techniques are well known in the art of molecular biology. For purposes of illustration, suitable moderately stringent conditions for testing the hybridization of a polynucleotide of this invention with other polynucleotides include prewashing in a

solution of 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and 0.2X SSC containing 0.1% SDS.

Moreover, it will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal homology to the nucleotide sequence of any native gene. Nonetheless, polynucleotides that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous genes that are altered as a result of one or more mutations, such as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

PROBES AND PRIMERS

In other embodiments of the present invention, the polynucleotide sequences provided herein can be advantageously used as probes or primers for nucleic acid hybridization. As such, it is contemplated that nucleic acid segments that comprise a sequence region of at least about 15 nucleotide long contiguous sequence that has the same sequence as, or is complementary to, a 15 nucleotide long contiguous sequence disclosed herein will find particular utility. Longer contiguous identical or complementary sequences, *e.g.*, those of about 20, 30, 40, 50, 100, 200, 500, 1000 (including all intermediate lengths) and even up to full length sequences will also be of use in certain embodiments.

The ability of such nucleic acid probes to specifically hybridize to a sequence of interest will enable them to be of use in detecting the presence of complementary sequences in a given sample. However, other uses are also envisioned,

such as the use of the sequence information for the preparation of mutant species primers, or primers for use in preparing other genetic constructions.

Polynucleotide molecules having sequence regions consisting of contiguous nucleotide stretches of 10-14, 15-20, 30, 50, or even of 100-200 nucleotides or so (including intermediate lengths as well), identical or complementary to a polynucleotide sequence disclosed herein, are particularly contemplated as hybridization probes for use in, *e.g.*, Southern and Northern blotting. This would allow a gene product, or fragment thereof, to be analyzed, both in diverse cell types and also in various bacterial cells. The total size of fragment, as well as the size of the complementary stretch(es), will ultimately depend on the intended use or application of the particular nucleic acid segment. Smaller fragments will generally find use in hybridization embodiments, wherein the length of the contiguous complementary region may be varied, such as between about 15 and about 100 nucleotides, but larger contiguous complementarity stretches may be used, according to the length complementary sequences one wishes to detect.

The use of a hybridization probe of about 15-25 nucleotides in length allows the formation of a duplex molecule that is both stable and selective. Molecules having contiguous complementary sequences over stretches greater than 15 bases in length are generally preferred, though, in order to increase stability and selectivity of the hybrid, and thereby improve the quality and degree of specific hybrid molecules obtained. One will generally prefer to design nucleic acid molecules having gene-complementary stretches of 15 to 25 contiguous nucleotides, or even longer where desired.

Hybridization probes may be selected from any portion of any of the sequences disclosed herein. All that is required is to review the sequence set forth in SEQ ID NO: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669

and 1676, or to any continuous portion of the sequence, from about 15-25 nucleotides in length up to and including the full length sequence, that one wishes to utilize as a probe or primer. The choice of probe and primer sequences may be governed by various factors. For example, one may wish to employ primers from towards the termini of the total sequence.

Small polynucleotide segments or fragments may be readily prepared by, for example, directly synthesizing the fragment by chemical means, as is commonly practiced using an automated oligonucleotide synthesizer. Also, fragments may be obtained by application of nucleic acid reproduction technology, such as the PCR™ technology of U. S. Patent 4,683,202 (incorporated herein by reference), by introducing selected sequences into recombinant vectors for recombinant production, and by other recombinant DNA techniques generally known to those of skill in the art of molecular biology.

The nucleotide sequences of the invention may be used for their ability to selectively form duplex molecules with complementary stretches of the entire gene or gene fragments of interest. Depending on the application envisioned, one will typically desire to employ varying conditions of hybridization to achieve varying degrees of selectivity of probe towards target sequence. For applications requiring high selectivity, one will typically desire to employ relatively stringent conditions to form the hybrids, *e.g.*, one will select relatively low salt and/or high temperature conditions, such as provided by a salt concentration of from about 0.02 M to about 0.15 M salt at temperatures of from about 50°C to about 70°C. Such selective conditions tolerate little, if any, mismatch between the probe and the template or target strand, and would be particularly suitable for isolating related sequences.

Of course, for some applications, for example, where one desires to prepare mutants employing a mutant primer strand hybridized to an underlying template, less stringent (reduced stringency) hybridization conditions will typically be needed in order to allow formation of the heteroduplex. In these circumstances, one may desire to employ salt conditions such as those of from about 0.15 M to about 0.9 M salt, at temperatures ranging from about 20°C to about 55°C. Cross-hybridizing species can thereby be readily

identified as positively hybridizing signals with respect to control hybridizations. In any case, it is generally appreciated that conditions can be rendered more stringent by the addition of increasing amounts of formamide, which serves to destabilize the hybrid duplex in the same manner as increased temperature. Thus, hybridization conditions can be readily manipulated, and thus will generally be a method of choice depending on the desired results.

POLYNUCLEOTIDE IDENTIFICATION AND CHARACTERIZATION

Polynucleotides may be identified, prepared and/or manipulated using any of a variety of well established techniques. For example, a polynucleotide may be identified, as described in more detail below, by screening a microarray of cDNAs for tumor-associated expression (*i.e.,* expression that is at least two fold greater in a tumor than in normal tissue, as determined using a representative assay provided herein). Such screens may be performed, for example, using a Synteni microarray (Palo Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena *et al.*, *Proc. Natl. Acad. Sci. USA 93*:10614-10619, 1996 and Heller *et al.*, *Proc. Natl. Acad. Sci. USA 94*:2150-2155, 1997). Alternatively, polynucleotides may be amplified from cDNA prepared from cells expressing the proteins described herein, such as lung tumor cells. Such polynucleotides may be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

An amplified portion of a polynucleotide of the present invention may be used to isolate a full length gene from a suitable library (*e.g.,* a lung tumor cDNA library) using well known techniques. Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be preferred for identifying 5' and upstream regions of genes. Genomic libraries are preferred for obtaining introns and extending 5' sequences.

For hybridization techniques, a partial sequence may be labeled (*e.g.*, by nick-translation or end-labeling with ^{32}P) using well known techniques. A bacterial or bacteriophage library is then generally screened by hybridizing filters containing denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (*see* Sambrook *et al.*, *Molecular Cloning: A Laboratory Manual,* Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The complete sequence may then be determined using standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences can then assembled into a single contiguous sequence. A full length cDNA molecule can be generated by ligating suitable fragments, using well known techniques.

Alternatively, there are numerous amplification techniques for obtaining a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30 nucleotides in length, have a GC content of at least 50% and anneal to the target sequence at temperatures of about 68°C to 72°C. The amplified region may be sequenced as described above, and overlapping sequences assembled into a contiguous sequence.

One such amplification technique is inverse PCR (*see* Triglia *et al.*, *Nucl. Acids Res. 16*:8186, 1988), which uses restriction enzymes to generate a fragment in the known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of amplification with the

same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Another such technique is known as "rapid amplification of cDNA ends" or RACE. This technique involves the use of an internal primer and an external primer, which hybridizes to a polyA region or vector sequence, to identify sequences that are 5' and 3' of a known sequence. Additional techniques include capture PCR (Lagerstrom *et al.*, *PCR Methods Applic. 1*:111-19, 1991) and walking PCR (Parker *et al.*, *Nucl. Acids. Res. 19*:3055-60, 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be performed using well known programs (*e.g.*, NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence. Full length DNA sequences may also be obtained by analysis of genomic fragments.

POLYNUCLEOTIDE EXPRESSION IN HOST CELLS

In other embodiments of the invention, polynucleotide sequences or fragments thereof which encode polypeptides of the invention, or fusion proteins or functional equivalents thereof, may be used in recombinant DNA molecules to direct expression of a polypeptide in appropriate host cells. Due to the inherent degeneracy of the genetic code, other DNA sequences that encode substantially the same or a functionally equivalent amino acid sequence may be produced and these sequences may be used to clone and express a given polypeptide.

As will be understood by those of skill in the art, it may be advantageous in some instances to produce polypeptide-encoding nucleotide sequences possessing non-naturally occurring codons. For example, codons preferred by a particular prokaryotic or eukaryotic host can be selected to increase the rate of protein expression or to produce a

recombinant RNA transcript having desirable properties, such as a half-life which is longer than that of a transcript generated from the naturally occurring sequence.

Moreover, the polynucleotide sequences of the present invention can be engineered using methods generally known in the art in order to alter polypeptide encoding sequences for a variety of reasons, including but not limited to, alterations which modify the cloning, processing, and/or expression of the gene product. For example, DNA shuffling by random fragmentation and PCR reassembly of gene fragments and synthetic oligonucleotides may be used to engineer the nucleotide sequences. In addition, site-directed mutagenesis may be used to insert new restriction sites, alter glycosylation patterns, change codon preference, produce splice variants, or introduce mutations, and so forth.

In another embodiment of the invention, natural, modified, or recombinant nucleic acid sequences may be ligated to a heterologous sequence to encode a fusion protein. For example, to screen peptide libraries for inhibitors of polypeptide activity, it may be useful to encode a chimeric protein that can be recognized by a commercially available antibody. A fusion protein may also be engineered to contain a cleavage site located between the polypeptide-encoding sequence and the heterologous protein sequence, so that the polypeptide may be cleaved and purified away from the heterologous moiety.

Sequences encoding a desired polypeptide may be synthesized, in whole or in part, using chemical methods well known in the art (see Caruthers, M. H. *et al.* (1980) *Nucl. Acids Res. Symp. Ser.* 215-223, Horn, T. *et al.* (1980) *Nucl. Acids Res. Symp. Ser.* 225-232). Alternatively, the protein itself may be produced using chemical methods to synthesize the amino acid sequence of a polypeptide, or a portion thereof. For example, peptide synthesis can be performed using various solid-phase techniques (Roberge, J. Y. *et al.* (1995) *Science 269*:202-204) and automated synthesis may be achieved, for example, using the ABI 431A Peptide Synthesizer (Perkin Elmer, Palo Alto, CA).

A newly synthesized peptide may be substantially purified by preparative high performance liquid chromatography (*e.g.*, Creighton, T. (1983) Proteins, Structures and Molecular Principles, WH Freeman and Co., New York, N.Y.) or other comparable

techniques available in the art. The composition of the synthetic peptides may be confirmed by amino acid analysis or sequencing (*e.g.*, the Edman degradation procedure). Additionally, the amino acid sequence of a polypeptide, or any part thereof, may be altered during direct synthesis and/or combined using chemical methods with sequences from other proteins, or any part thereof, to produce a variant polypeptide.

In order to express a desired polypeptide, the nucleotide sequences encoding the polypeptide, or functional equivalents, may be inserted into appropriate expression vector, *i.e.*, a vector which contains the necessary elements for the transcription and translation of the inserted coding sequence. Methods which are well known to those skilled in the art may be used to construct expression vectors containing sequences encoding a polypeptide of interest and appropriate transcriptional and translational control elements. These methods include in vitro recombinant DNA techniques, synthetic techniques, and in vivo genetic recombination. Such techniques are described in Sambrook, J. *et al.* (1989) Molecular Cloning, A Laboratory Manual, Cold Spring Harbor Press, Plainview, N.Y., and Ausubel, F. M. *et al.* (1989) Current Protocols in Molecular Biology, John Wiley & Sons, New York. N.Y.

A variety of expression vector/host systems may be utilized to contain and express polynucleotide sequences. These include, but are not limited to, microorganisms such as bacteria transformed with recombinant bacteriophage, plasmid, or cosmid DNA expression vectors; yeast transformed with yeast expression vectors; insect cell systems infected with virus expression vectors (*e.g.*, baculovirus); plant cell systems transformed with virus expression vectors (*e.g.*, cauliflower mosaic virus, CaMV; tobacco mosaic virus, TMV) or with bacterial expression vectors (*e.g.*, Ti or pBR322 plasmids); or animal cell systems.

The "control elements" or "regulatory sequences" present in an expression vector are those non-translated regions of the vector--enhancers, promoters, 5' and 3' untranslated regions--which interact with host cellular proteins to carry out transcription and translation. Such elements may vary in their strength and specificity. Depending on the vector system and host utilized, any number of suitable transcription and translation

elements, including constitutive and inducible promoters, may be used. For example, when cloning in bacterial systems, inducible promoters such as the hybrid lacZ promoter of the PBLUESCRIPT phagemid (Stratagene, La Jolla, Calif.) or PSPORT1 plasmid (Gibco BRL, Gaithersburg, MD) and the like may be used. In mammalian cell systems, promoters from mammalian genes or from mammalian viruses are generally preferred. If it is necessary to generate a cell line that contains multiple copies of the sequence encoding a polypeptide, vectors based on SV40 or EBV may be advantageously used with an appropriate selectable marker.

In bacterial systems, a number of expression vectors may be selected depending upon the use intended for the expressed polypeptide. For example, when large quantities are needed, for example for the induction of antibodies, vectors which direct high level expression of fusion proteins that are readily purified may be used. Such vectors include, but are not limited to, the multifunctional *E. coli* cloning and expression vectors such as BLUESCRIPT (Stratagene), in which the sequence encoding the polypeptide of interest may be ligated into the vector in frame with sequences for the amino-terminal Met and the subsequent 7 residues of .beta.-galactosidase so that a hybrid protein is produced; pIN vectors (Van Heeke, G. and S. M. Schuster (1989) *J. Biol. Chem. 264*:5503-5509); and the like. pGEX Vectors (Promega, Madison, Wis.) may also be used to express foreign polypeptides as fusion proteins with glutathione S-transferase (GST). In general, such fusion proteins are soluble and can easily be purified from lysed cells by adsorption to glutathione-agarose beads followed by elution in the presence of free glutathione. Proteins made in such systems may be designed to include heparin, thrombin, or factor XA protease cleavage sites so that the cloned polypeptide of interest can be released from the GST moiety at will.

In the yeast, Saccharomyces cerevisiae, a number of vectors containing constitutive or inducible promoters such as alpha factor, alcohol oxidase, and PGH may be used. For reviews, see Ausubel *et al.* (supra) and Grant *et al.* (1987) *Methods Enzymol.* 153:516-544.

In cases where plant expression vectors are used, the expression of sequences encoding polypeptides may be driven by any of a number of promoters. For example, viral promoters such as the 35S and 19S promoters of CaMV may be used alone or in combination with the omega leader sequence from TMV (Takamatsu, N. (1987) *EMBO J. 6*:307-311. Alternatively, plant promoters such as the small subunit of RUBISCO or heat shock promoters may be used (Coruzzi, G. *et al.* (1984) *EMBO J. 3*:1671-1680; Broglie, R. *et al.* (1984) *Science 224*:838-843; and Winter, J. *et al.* (1991) *Results Probl. Cell Differ. 17*:85-105). These constructs can be introduced into plant cells by direct DNA transformation or pathogen-mediated transfection. Such techniques are described in a number of generally available reviews (see, for example, Hobbs, S. or Murry, L. E. in McGraw Hill Yearbook of Science and Technology (1992) McGraw Hill, New York, N.Y.; pp. 191-196).

An insect system may also be used to express a polypeptide of interest. For example, in one such system, Autographa californica nuclear polyhedrosis virus (AcNPV) is used as a vector to express foreign genes in Spodoptera frugiperda cells or in Trichoplusia larvae. The sequences encoding the polypeptide may be cloned into a non-essential region of the virus, such as the polyhedrin gene, and placed under control of the polyhedrin promoter. Successful insertion of the polypeptide-encoding sequence will render the polyhedrin gene inactive and produce recombinant virus lacking coat protein. The recombinant viruses may then be used to infect, for example, S. frugiperda cells or Trichoplusia larvae in which the polypeptide of interest may be expressed (Engelhard, E. K. *et al.* (1994) *Proc. Natl. Acad. Sci. 91* :3224-3227).

In mammalian host cells, a number of viral-based expression systems are generally available. For example, in cases where an adenovirus is used as an expression vector, sequences encoding a polypeptide of interest may be ligated into an adenovirus transcription/translation complex consisting of the late promoter and tripartite leader sequence. Insertion in a non-essential E1 or E3 region of the viral genome may be used to obtain a viable virus which is capable of expressing the polypeptide in infected host cells (Logan, J. and Shenk, T. (1984) *Proc. Natl. Acad. Sci. 81*:3655-3659). In addition,

transcription enhancers, such as the Rous sarcoma virus (RSV) enhancer, may be used to increase expression in mammalian host cells.

Specific initiation signals may also be used to achieve more efficient translation of sequences encoding a polypeptide of interest. Such signals include the ATG initiation codon and adjacent sequences. In cases where sequences encoding the polypeptide, its initiation codon, and upstream sequences are inserted into the appropriate expression vector, no additional transcriptional or translational control signals may be needed. However, in cases where only coding sequence, or a portion thereof, is inserted, exogenous translational control signals including the ATG initiation codon should be provided. Furthermore, the initiation codon should be in the correct reading frame to ensure translation of the entire insert. Exogenous translational elements and initiation codons may be of various origins, both natural and synthetic. The efficiency of expression may be enhanced by the inclusion of enhancers which are appropriate for the particular cell system which is used, such as those described in the literature (Scharf, D. *et al.* (1994) *Results Probl. Cell Differ. 20*:125-162).

In addition, a host cell strain may be chosen for its ability to modulate the expression of the inserted sequences or to process the expressed protein in the desired fashion. Such modifications of the polypeptide include, but are not limited to, acetylation, carboxylation. glycosylation, phosphorylation, lipidation, and acylation. Post-translational processing which cleaves a "prepro" form of the protein may also be used to facilitate correct insertion, folding and/or function. Different host cells such as CHO, HeLa, MDCK, HEK293, and WI38, which have specific cellular machinery and characteristic mechanisms for such post-translational activities, may be chosen to ensure the correct modification and processing of the foreign protein.

For long-term, high-yield production of recombinant proteins, stable expression is generally preferred. For example, cell lines which stably express a polynucleotide of interest may be transformed using expression vectors which may contain viral origins of replication and/or endogenous expression elements and a selectable marker gene on the same or on a separate vector. Following the introduction of the vector, cells

may be allowed to grow for 1-2 days in an enriched media before they are switched to selective media. The purpose of the selectable marker is to confer resistance to selection, and its presence allows growth and recovery of cells which successfully express the introduced sequences. Resistant clones of stably transformed cells may be proliferated using tissue culture techniques appropriate to the cell type.

Any number of selection systems may be used to recover transformed cell lines. These include, but are not limited to, the herpes simplex virus thymidine kinase (Wigler, M. *et al.* (1977) *Cell 11*:223-32) and adenine phosphoribosyltransferase (Lowy, I. *et al.* (1990) *Cell 22*:817-23) genes which can be employed in tk.sup.- or aprt.sup.- cells, respectively. Also, antimetabolite, antibiotic or herbicide resistance can be used as the basis for selection; for example, dhfr which confers resistance to methotrexate (Wigler, M. *et al.* (1980) *Proc. Natl. Acad. Sci. 77*:3567-70); npt, which confers resistance to the aminoglycosides, neomycin and G-418 (Colbere-Garapin, F. et al (1981) *J. Mol. Biol. 150*:1-14); and als or pat, which confer resistance to chlorsulfuron and phosphinotricin acetyltransferase, respectively (Murry, *supra*). Additional selectable genes have been described, for example, trpB, which allows cells to utilize indole in place of tryptophan, or hisD, which allows cells to utilize histinol in place of histidine (Hartman, S. C. and R. C. Mulligan (1988) *Proc. Natl. Acad. Sci. 85*:8047-51). Recently, the use of visible markers has gained popularity with such markers as anthocyanins, beta-glucuronidase and its substrate GUS, and luciferase and its substrate luciferin, being widely used not only to identify transformants, but also to quantify the amount of transient or stable protein expression attributable to a specific vector system (Rhodes, C. A. *et al.* (1995) *Methods Mol. Biol. 55*:121-131).

Although the presence/absence of marker gene expression suggests that the gene of interest is also present, its presence and expression may need to be confirmed. For example, if the sequence encoding a polypeptide is inserted within a marker gene sequence, recombinant cells containing sequences can be identified by the absence of marker gene function. Alternatively, a marker gene can be placed in tandem with a polypeptide-encoding sequence under the control of a single promoter. Expression of the marker gene

in response to induction or selection usually indicates expression of the tandem gene as well.

Alternatively, host cells which contain and express a desired polynucleotide sequence may be identified by a variety of procedures known to those of skill in the art. These procedures include, but are not limited to, DNA-DNA or DNA-RNA hybridizations and protein bioassay or immunoassay techniques which include membrane, solution, or chip based technologies for the detection and/or quantification of nucleic acid or protein.

A variety of protocols for detecting and measuring the expression of polynucleotide-encoded products, using either polyclonal or monoclonal antibodies specific for the product are known in the art. Examples include enzyme-linked immunosorbent assay (ELISA), radioimmunoassay (RIA), and fluorescence activated cell sorting (FACS). A two-site, monoclonal-based immunoassay utilizing monoclonal antibodies reactive to two non-interfering epitopes on a given polypeptide may be preferred for some applications, but a competitive binding assay may also be employed. These and other assays are described, among other places, in Hampton, R. *et al.* (1990; Serological Methods, a Laboratory Manual, APS Press, St Paul. Minn.) and Maddox, D. E. *et al.* (1983; *J. Exp. Med. 158*:1211-1216).

A wide variety of labels and conjugation techniques are known by those skilled in the art and may be used in various nucleic acid and amino acid assays. Means for producing labeled hybridization or PCR probes for detecting sequences related to polynucleotides include oligolabeling, nick translation, end-labeling or PCR amplification using a labeled nucleotide. Alternatively, the sequences, or any portions thereof may be cloned into a vector for the production of an mRNA probe. Such vectors are known in the art, are commercially available, and may be used to synthesize RNA probes in vitro by addition of an appropriate RNA polymerase such as T7, T3, or SP6 and labeled nucleotides. These procedures may be conducted using a variety of commercially available kits. Suitable reporter molecules or labels, which may be used include radionuclides, enzymes, fluorescent, chemiluminescent, or chromogenic agents as well as substrates, cofactors, inhibitors, magnetic particles, and the like.

Host cells transformed with a polynucleotide sequence of interest may be cultured under conditions suitable for the expression and recovery of the protein from cell culture. The protein produced by a recombinant cell may be secreted or contained intracellularly depending on the sequence and/or the vector used. As will be understood by those of skill in the art, expression vectors containing polynucleotides of the invention may be designed to contain signal sequences which direct secretion of the encoded polypeptide through a prokaryotic or eukaryotic cell membrane. Other recombinant constructions may be used to join sequences encoding a polypeptide of interest to nucleotide sequence encoding a polypeptide domain which will facilitate purification of soluble proteins. Such purification facilitating domains include, but are not limited to, metal chelating peptides such as histidine-tryptophan modules that allow purification on immobilized metals, protein A domains that allow purification on immobilized immunoglobulin, and the domain utilized in the FLAGS extension/affinity purification system (Immunex Corp., Seattle, Wash.). The inclusion of cleavable linker sequences such as those specific for Factor XA or enterokinase (Invitrogen. San Diego, Calif.) between the purification domain and the encoded polypeptide may be used to facilitate purification. One such expression vector provides for expression of a fusion protein containing a polypeptide of interest and a nucleic acid encoding 6 histidine residues preceding a thioredoxin or an enterokinase cleavage site. The histidine residues facilitate purification on IMIAC (immobilized metal ion affinity chromatography) as described in Porath, J. *et al.* (1992, *Prot. Exp. Purif. 3*:263-281) while the enterokinase cleavage site provides a means for purifying the desired polypeptide from the fusion protein. A discussion of vectors which contain fusion proteins is provided in Kroll, D. J. *et al.* (1993; *DNA Cell Biol. 12*:441-453).

In addition to recombinant production methods, polypeptides of the invention, and fragments thereof, may be produced by direct peptide synthesis using solid-phase techniques (Merrifield J. (1963) *J. Am. Chem. Soc. 85*:2149-2154). Protein synthesis may be performed using manual techniques or by automation. Automated synthesis may be achieved, for example, using Applied Biosystems 431A Peptide Synthesizer (Perkin

Elmer). Alternatively, various fragments may be chemically synthesized separately and combined using chemical methods to produce the full length molecule.

SITE-SPECIFIC MUTAGENESIS

Site-specific mutagenesis is a technique useful in the preparation of individual peptides, or biologically functional equivalent polypeptides, through specific mutagenesis of the underlying polynucleotides that encode them. The technique, well-known to those of skill in the art, further provides a ready ability to prepare and test sequence variants, for example, incorporating one or more of the foregoing considerations, by introducing one or more nucleotide sequence changes into the DNA. Site-specific mutagenesis allows the production of mutants through the use of specific oligonucleotide sequences which encode the DNA sequence of the desired mutation, as well as a sufficient number of adjacent nucleotides, to provide a primer sequence of sufficient size and sequence complexity to form a stable duplex on both sides of the deletion junction being traversed. Mutations may be employed in a selected polynucleotide sequence to improve, alter, decrease, modify, or otherwise change the properties of the polynucleotide itself, and/or alter the properties, activity, composition, stability, or primary sequence of the encoded polypeptide.

In certain embodiments of the present invention, the inventors contemplate the mutagenesis of the disclosed polynucleotide sequences to alter one or more properties of the encoded polypeptide, such as the antigenicity of a polypeptide vaccine. The techniques of site-specific mutagenesis are well-known in the art, and are widely used to create variants of both polypeptides and polynucleotides. For example, site-specific mutagenesis is often used to alter a specific portion of a DNA molecule. In such embodiments, a primer comprising typically about 14 to about 25 nucleotides or so in length is employed, with about 5 to about 10 residues on both sides of the junction of the sequence being altered.

As will be appreciated by those of skill in the art, site-specific mutagenesis techniques have often employed a phage vector that exists in both a single stranded and

double stranded form. Typical vectors useful in site-directed mutagenesis include vectors such as the M13 phage. These phage are readily commercially-available and their use is generally well-known to those skilled in the art. Double-stranded plasmids are also routinely employed in site directed mutagenesis that eliminates the step of transferring the gene of interest from a plasmid to a phage.

In general, site-directed mutagenesis in accordance herewith is performed by first obtaining a single-stranded vector or melting apart of two strands of a double-stranded vector that includes within its sequence a DNA sequence that encodes the desired peptide. An oligonucleotide primer bearing the desired mutated sequence is prepared, generally synthetically. This primer is then annealed with the single-stranded vector, and subjected to DNA polymerizing enzymes such as *E. coli* polymerase I Klenow fragment, in order to complete the synthesis of the mutation-bearing strand. Thus, a heteroduplex is formed wherein one strand encodes the original non-mutated sequence and the second strand bears the desired mutation. This heteroduplex vector is then used to transform appropriate cells, such as *E. coli* cells, and clones are selected which include recombinant vectors bearing the mutated sequence arrangement.

The preparation of sequence variants of the selected peptide-encoding DNA segments using site-directed mutagenesis provides a means of producing potentially useful species and is not meant to be limiting as there are other ways in which sequence variants of peptides and the DNA sequences encoding them may be obtained. For example, recombinant vectors encoding the desired peptide sequence may be treated with mutagenic agents, such as hydroxylamine, to obtain sequence variants. Specific details regarding these methods and protocols are found in the teachings of Maloy *et al.*, 1994; Segal, 1976; Prokop and Bajpai, 1991; Kuby, 1994; and Maniatis *et al.*, 1982, each incorporated herein by reference, for that purpose.

As used herein, the term "oligonucleotide directed mutagenesis procedure" refers to template-dependent processes and vector-mediated propagation which result in an increase in the concentration of a specific nucleic acid molecule relative to its initial concentration, or in an increase in the concentration of a detectable signal, such as

amplification. As used herein, the term "oligonucleotide directed mutagenesis procedure" is intended to refer to a process that involves the template-dependent extension of a primer molecule. The term template dependent process refers to nucleic acid synthesis of an RNA or a DNA molecule wherein the sequence of the newly synthesized strand of nucleic acid is dictated by the well-known rules of complementary base pairing (see, for example, Watson, 1987). Typically, vector mediated methodologies involve the introduction of the nucleic acid fragment into a DNA or RNA vector, the clonal amplification of the vector, and the recovery of the amplified nucleic acid fragment. Examples of such methodologies are provided by U. S. Patent No. 4,237,224, specifically incorporated herein by reference in its entirety.

POLYNUCLEOTIDE AMPLIFICATION TECHNIQUES

A number of template dependent processes are available to amplify the target sequences of interest present in a sample. One of the best known amplification methods is the polymerase chain reaction (PCR™) which is described in detail in U.S. Patent Nos. 4,683,195, 4,683,202 and 4,800,159, each of which is incorporated herein by reference in its entirety. Briefly, in PCR™, two primer sequences are prepared which are complementary to regions on opposite complementary strands of the target sequence. An excess of deoxynucleoside triphosphates is added to a reaction mixture along with a DNA polymerase (*e.g.*, *Taq* polymerase). If the target sequence is present in a sample, the primers will bind to the target and the polymerase will cause the primers to be extended along the target sequence by adding on nucleotides. By raising and lowering the temperature of the reaction mixture, the extended primers will dissociate from the target to form reaction products, excess primers will bind to the target and to the reaction product and the process is repeated. Preferably reverse transcription and PCR™ amplification procedure may be performed in order to quantify the amount of mRNA amplified. Polymerase chain reaction methodologies are well known in the art.

Another method for amplification is the ligase chain reaction (referred to as LCR), disclosed in Eur. Pat. Appl. Publ. No. 320,308 (specifically incorporated herein by

reference in its entirety). In LCR, two complementary probe pairs are prepared, and in the presence of the target sequence, each pair will bind to opposite complementary strands of the target such that they abut. In the presence of a ligase, the two probe pairs will link to form a single unit. By temperature cycling, as in PCR™, bound ligated units dissociate from the target and then serve as "target sequences" for ligation of excess probe pairs. U.S. Patent No. 4,883,750, incorporated herein by reference in its entirety, describes an alternative method of amplification similar to LCR for binding probe pairs to a target sequence.

Qbeta Replicase, described in PCT Intl. Pat. Appl. Publ. No. PCT/US87/00880, incorporated herein by reference in its entirety, may also be used as still another amplification method in the present invention. In this method, a replicative sequence of RNA that has a region complementary to that of a target is added to a sample in the presence of an RNA polymerase. The polymerase will copy the replicative sequence that can then be detected.

An isothermal amplification method, in which restriction endonucleases and ligases are used to achieve the amplification of target molecules that contain nucleotide 5'-[α-thio]triphosphates in one strand of a restriction site (Walker *et al.*, 1992, incorporated herein by reference in its entirety), may also be useful in the amplification of nucleic acids in the present invention.

Strand Displacement Amplification (SDA) is another method of carrying out isothermal amplification of nucleic acids which involves multiple rounds of strand displacement and synthesis, *i.e.* nick translation. A similar method, called Repair Chain Reaction (RCR) is another method of amplification which may be useful in the present invention and is involves annealing several probes throughout a region targeted for amplification, followed by a repair reaction in which only two of the four bases are present. The other two bases can be added as biotinylated derivatives for easy detection. A similar approach is used in SDA.

Sequences can also be detected using a cyclic probe reaction (CPR). In CPR, a probe having a 3' and 5' sequences of non-target DNA and an internal or “middle”

sequence of the target protein specific RNA is hybridized to DNA which is present in a sample. Upon hybridization, the reaction is treated with RNaseH, and the products of the probe are identified as distinctive products by generating a signal that is released after digestion. The original template is annealed to another cycling probe and the reaction is repeated. Thus, CPR involves amplifying a signal generated by hybridization of a probe to a target gene specific expressed nucleic acid.

Still other amplification methods described in Great Britain Pat. Appl. No. 2 202 328, and in PCT Intl. Pat. Appl. Publ. No. PCT/US89/01025, each of which is incorporated herein by reference in its entirety, may be used in accordance with the present invention. In the former application, "modified" primers are used in a PCR-like, template and enzyme dependent synthesis. The primers may be modified by labeling with a capture moiety (*e.g.*, biotin) and/or a detector moiety (*e.g.*, enzyme). In the latter application, an excess of labeled probes is added to a sample. In the presence of the target sequence, the probe binds and is cleaved catalytically. After cleavage, the target sequence is released intact to be bound by excess probe. Cleavage of the labeled probe signals the presence of the target sequence.

Other nucleic acid amplification procedures include transcription-based amplification systems (TAS) (Kwoh *et al.*, 1989; PCT Intl. Pat. Appl. Publ. No. WO 88/10315, incorporated herein by reference in its entirety), including nucleic acid sequence based amplification (NASBA) and 3SR. In NASBA, the nucleic acids can be prepared for amplification by standard phenol/chloroform extraction, heat denaturation of a sample, treatment with lysis buffer and minispin columns for isolation of DNA and RNA or guanidinium chloride extraction of RNA. These amplification techniques involve annealing a primer that has sequences specific to the target sequence. Following polymerization, DNA/RNA hybrids are digested with RNase H while double stranded DNA molecules are heat-denatured again. In either case the single stranded DNA is made fully double stranded by addition of second target-specific primer, followed by polymerization. The double stranded DNA molecules are then multiply transcribed by a polymerase such as T7 or SP6. In an isothermal cyclic reaction, the RNAs are reverse

transcribed into DNA, and transcribed once again with a polymerase such as T7 or SP6. The resulting products, whether truncated or complete, indicate target-specific sequences.

Eur. Pat. Appl. Publ. No. 329,822, incorporated herein by reference in its entirety, disclose a nucleic acid amplification process involving cyclically synthesizing single-stranded RNA ("ssRNA"), ssDNA, and double-stranded DNA (dsDNA), which may be used in accordance with the present invention. The ssRNA is a first template for a first primer oligonucleotide, which is elongated by reverse transcriptase (RNA-dependent DNA polymerase). The RNA is then removed from resulting DNA:RNA duplex by the action of ribonuclease H (RNase H, an RNase specific for RNA in a duplex with either DNA or RNA). The resultant ssDNA is a second template for a second primer, which also includes the sequences of an RNA polymerase promoter (exemplified by T7 RNA polymerase) 5' to its homology to its template. This primer is then extended by DNA polymerase (exemplified by the large "Klenow" fragment of *E. coli* DNA polymerase I), resulting as a double-stranded DNA ("dsDNA") molecule, having a sequence identical to that of the original RNA between the primers and having additionally, at one end, a promoter sequence. This promoter sequence can be used by the appropriate RNA polymerase to make many RNA copies of the DNA. These copies can then re-enter the cycle leading to very swift amplification. With proper choice of enzymes, this amplification can be done isothermally without addition of enzymes at each cycle. Because of the cyclical nature of this process, the starting sequence can be chosen to be in the form of either DNA or RNA.

PCT Intl. Pat. Appl. Publ. No. WO 89/06700, incorporated herein by reference in its entirety, disclose a nucleic acid sequence amplification scheme based on the hybridization of a promoter/primer sequence to a target single-stranded DNA ("ssDNA") followed by transcription of many RNA copies of the sequence. This scheme is not cyclic; *i.e.* new templates are not produced from the resultant RNA transcripts. Other amplification methods include "RACE" (Frohman, 1990), and "one-sided PCR" (Ohara, 1989) which are well-known to those of skill in the art.

Methods based on ligation of two (or more) oligonucleotides in the presence of nucleic acid having the sequence of the resulting "di-oligonucleotide", thereby

amplifying the di-oligonucleotide (Wu and Dean, 1996, incorporated herein by reference in its entirety), may also be used in the amplification of DNA sequences of the present invention.

BIOLOGICAL FUNCTIONAL EQUIVALENTS

Modification and changes may be made in the structure of the polynucleotides and polypeptides of the present invention and still obtain a functional molecule that encodes a polypeptide with desirable characteristics. As mentioned above, it is often desirable to introduce one or more mutations into a specific polynucleotide sequence. In certain circumstances, the resulting encoded polypeptide sequence is altered by this mutation, or in other cases, the sequence of the polypeptide is unchanged by one or more mutations in the encoding polynucleotide.

When it is desirable to alter the amino acid sequence of a polypeptide to create an equivalent, or even an improved, second-generation molecule, the amino acid changes may be achieved by changing one or more of the codons of the encoding DNA sequence, according to Table 1.

For example, certain amino acids may be substituted for other amino acids in a protein structure without appreciable loss of interactive binding capacity with structures such as, for example, antigen-binding regions of antibodies or binding sites on substrate molecules. Since it is the interactive capacity and nature of a protein that defines that protein's biological functional activity, certain amino acid sequence substitutions can be made in a protein sequence, and, of course, its underlying DNA coding sequence, and nevertheless obtain a protein with like properties. It is thus contemplated by the inventors that various changes may be made in the peptide sequences of the disclosed compositions, or corresponding DNA sequences which encode said peptides without appreciable loss of their biological utility or activity.

TABLE 1

Amino Acids			**Codons**					
Alanine	Ala	A	GCA	GCC	GCG	GCU		
Cysteine	Cys	C	UGC	UGU				
Aspartic acid	Asp	D	GAC	GAU				
Glutamic acid	Glu	E	GAA	GAG				
Phenylalanine	Phe	F	UUC	UUU				
Glycine	Gly	G	GGA	GGC	GGG	GGU		
Histidine	His	H	CAC	CAU				
Isoleucine	Ile	I	AUA	AUC	AUU			
Lysine	Lys	K	AAA	AAG				
Leucine	Leu	L	UUA	UUG	CUA	CUC	CUG	CUU
Methionine	Met	M	AUG					
Asparagine	Asn	N	AAC	AAU				
Proline	Pro	P	CCA	CCC	CCG	CCU		
Glutamine	Gln	Q	CAA	CAG				
Arginine	Arg	R	AGA	AGG	CGA	CGC	CGG	CGU
Serine	Ser	S	AGC	AGU	UCA	UCC	UCG	UCU
Threonine	Thr	T	ACA	ACC	ACG	ACU		
Valine	Val	V	GUA	GUC	GUG	GUU		
Tryptophan	Trp	W	UGG					
Tyrosine	Tyr	Y	UAC	UAU				

In making such changes, the hydropathic index of amino acids may be considered. The importance of the hydropathic amino acid index in conferring interactive biologic function on a protein is generally understood in the art (Kyte and Doolittle, 1982, incorporated herein by reference). It is accepted that the relative hydropathic character of the amino acid contributes to the secondary structure of the resultant protein, which in turn defines the interaction of the protein with other molecules, for example, enzymes,

substrates, receptors, DNA, antibodies, antigens, and the like. Each amino acid has been assigned a hydropathic index on the basis of its hydrophobicity and charge characteristics (Kyte and Doolittle, 1982). These values are: isoleucine (+4.5); valine (+4.2); leucine (+3.8); phenylalanine (+2.8); cysteine/cystine (+2.5); methionine (+1.9); alanine (+1.8); glycine (–0.4); threonine (–0.7); serine (–0.8); tryptophan (–0.9); tyrosine (–1.3); proline (–1.6); histidine (–3.2); glutamate (–3.5); glutamine (–3.5); aspartate (–3.5); asparagine (–3.5); lysine (–3.9); and arginine (–4.5).

It is known in the art that certain amino acids may be substituted by other amino acids having a similar hydropathic index or score and still result in a protein with similar biological activity, *i.e.* still obtain a biological functionally equivalent protein. In making such changes, the substitution of amino acids whose hydropathic indices are within ±2 is preferred, those within ±1 are particularly preferred, and those within ±0.5 are even more particularly preferred. It is also understood in the art that the substitution of like amino acids can be made effectively on the basis of hydrophilicity. U. S. Patent 4,554,101 (specifically incorporated herein by reference in its entirety), states that the greatest local average hydrophilicity of a protein, as governed by the hydrophilicity of its adjacent amino acids, correlates with a biological property of the protein.

As detailed in U. S. Patent 4,554,101, the following hydrophilicity values have been assigned to amino acid residues: arginine (+3.0); lysine (+3.0); aspartate (+3.0 ± 1); glutamate (+3.0 ± 1); serine (+0.3); asparagine (+0.2); glutamine (+0.2); glycine (0); threonine (–0.4); proline (–0.5 ± 1); alanine (–0.5); histidine (–0.5); cysteine (–1.0); methionine (–1.3); valine (–1.5); leucine (–1.8); isoleucine (–1.8); tyrosine (–2.3); phenylalanine (–2.5); tryptophan (–3.4). It is understood that an amino acid can be substituted for another having a similar hydrophilicity value and still obtain a biologically equivalent, and in particular, an immunologically equivalent protein. In such changes, the substitution of amino acids whose hydrophilicity values are within ±2 is preferred, those within ±1 are particularly preferred, and those within ±0.5 are even more particularly preferred.

As outlined above, amino acid substitutions are generally therefore based on the relative similarity of the amino acid side-chain substituents, for example, their hydrophobicity, hydrophilicity, charge, size, and the like. Exemplary substitutions that take various of the foregoing characteristics into consideration are well known to those of skill in the art and include: arginine and lysine; glutamate and aspartate; serine and threonine; glutamine and asparagine; and valine, leucine and isoleucine.

In addition, any polynucleotide may be further modified to increase stability *in vivo*. Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3' ends; the use of phosphorothioate or 2' O-methyl rather than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such as inosine, queosine and wybutosine, as well as acetyl- methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

IN VIVO POLYNUCLEOTIDE DELIVERY TECHNIQUES

In additional embodiments, genetic constructs comprising one or more of the polynucleotides of the invention are introduced into cells *in vivo*. This may be achieved using any of a variety or well known approaches, several of which are outlined below for the purpose of illustration.

1. ADENOVIRUS

One of the preferred methods for *in vivo* delivery of one or more nucleic acid sequences involves the use of an adenovirus expression vector. "Adenovirus expression vector" is meant to include those constructs containing adenovirus sequences sufficient to (a) support packaging of the construct and (b) to express a polynucleotide that has been cloned therein in a sense or antisense orientation. Of course, in the context of an antisense construct, expression does not require that the gene product be synthesized.

The expression vector comprises a genetically engineered form of an adenovirus. Knowledge of the genetic organization of adenovirus, a 36 kb, linear, double-stranded DNA virus, allows substitution of large pieces of adenoviral DNA with foreign

sequences up to 7 kb (Grunhaus and Horwitz, 1992). In contrast to retrovirus, the adenoviral infection of host cells does not result in chromosomal integration because adenoviral DNA can replicate in an episomal manner without potential genotoxicity. Also, adenoviruses are structurally stable, and no genome rearrangement has been detected after extensive amplification. Adenovirus can infect virtually all epithelial cells regardless of their cell cycle stage. So far, adenoviral infection appears to be linked only to mild disease such as acute respiratory disease in humans.

Adenovirus is particularly suitable for use as a gene transfer vector because of its mid-sized genome, ease of manipulation, high titer, wide target-cell range and high infectivity. Both ends of the viral genome contain 100-200 base pair inverted repeats (ITRs), which are *cis* elements necessary for viral DNA replication and packaging. The early (E) and late (L) regions of the genome contain different transcription units that are divided by the onset of viral DNA replication. The E1 region (E1A and E1B) encodes proteins responsible for the regulation of transcription of the viral genome and a few cellular genes. The expression of the E2 region (E2A and E2B) results in the synthesis of the proteins for viral DNA replication. These proteins are involved in DNA replication, late gene expression and host cell shut-off (Renan, 1990). The products of the late genes, including the majority of the viral capsid proteins, are expressed only after significant processing of a single primary transcript issued by the major late promoter (MLP). The MLP, (located at 16.8 m.u.) is particularly efficient during the late phase of infection, and all the mRNA's issued from this promoter possess a 5′-tripartite leader (TPL) sequence which makes them preferred mRNA's for translation.

In a current system, recombinant adenovirus is generated from homologous recombination between shuttle vector and provirus vector. Due to the possible recombination between two proviral vectors, wild-type adenovirus may be generated from this process. Therefore, it is critical to isolate a single clone of virus from an individual plaque and examine its genomic structure.

Generation and propagation of the current adenovirus vectors, which are replication deficient, depend on a unique helper cell line, designated 293, which was

transformed from human embryonic kidney cells by Ad5 DNA fragments and constitutively expresses E1 proteins (Graham *et al.*, 1977). Since the E3 region is dispensable from the adenovirus genome (Jones and Shenk, 1978), the current adenovirus vectors, with the help of 293 cells, carry foreign DNA in either the E1, the D3 or both regions (Graham and Prevec, 1991). In nature, adenovirus can package approximately 105% of the wild-type genome (Ghosh-Choudhury *et al.*, 1987), providing capacity for about 2 extra kB of DNA. Combined with the approximately 5.5 kB of DNA that is replaceable in the E1 and E3 regions, the maximum capacity of the current adenovirus vector is under 7.5 kB, or about 15% of the total length of the vector. More than 80% of the adenovirus viral genome remains in the vector backbone and is the source of vector-borne cytotoxicity. Also, the replication deficiency of the E1-deleted virus is incomplete. For example, leakage of viral gene expression has been observed with the currently available vectors at high multiplicities of infection (MOI) (Mulligan, 1993).

Helper cell lines may be derived from human cells such as human embryonic kidney cells, muscle cells, hematopoietic cells or other human embryonic mesenchymal or epithelial cells. Alternatively, the helper cells may be derived from the cells of other mammalian species that are permissive for human adenovirus. Such cells include, *e.g.*, Vero cells or other monkey embryonic mesenchymal or epithelial cells. As stated above, the currently preferred helper cell line is 293.

Recently, Racher *et al.* (1995) disclosed improved methods for culturing 293 cells and propagating adenovirus. In one format, natural cell aggregates are grown by inoculating individual cells into 1 liter siliconized spinner flasks (Techne, Cambridge, UK) containing 100-200 ml of medium. Following stirring at 40 rpm, the cell viability is estimated with trypan blue. In another format, Fibra-Cel microcarriers (Bibby Sterlin, Stone, UK) (5 g/l) is employed as follows. A cell inoculum, resuspended in 5 ml of medium, is added to the carrier (50 ml) in a 250 ml Erlenmeyer flask and left stationary, with occasional agitation, for 1 to 4 h. The medium is then replaced with 50 ml of fresh medium and shaking initiated. For virus production, cells are allowed to grow to about 80% confluence, after which time the medium is replaced (to 25% of the final volume) and

adenovirus added at an MOI of 0.05. Cultures are left stationary overnight, following which the volume is increased to 100% and shaking commenced for another 72 h.

Other than the requirement that the adenovirus vector be replication defective, or at least conditionally defective, the nature of the adenovirus vector is not believed to be crucial to the successful practice of the invention. The adenovirus may be of any of the 42 different known serotypes or subgroups A-F. Adenovirus type 5 of subgroup C is the preferred starting material in order to obtain a conditional replication-defective adenovirus vector for use in the present invention, since Adenovirus type 5 is a human adenovirus about which a great deal of biochemical and genetic information is known, and it has historically been used for most constructions employing adenovirus as a vector.

As stated above, the typical vector according to the present invention is replication defective and will not have an adenovirus E1 region. Thus, it will be most convenient to introduce the polynucleotide encoding the gene of interest at the position from which the E1-coding sequences have been removed. However, the position of insertion of the construct within the adenovirus sequences is not critical to the invention. The polynucleotide encoding the gene of interest may also be inserted in lieu of the deleted E3 region in E3 replacement vectors as described by Karlsson *et al.* (1986) or in the E4 region where a helper cell line or helper virus complements the E4 defect.

Adenovirus is easy to grow and manipulate and exhibits broad host range *in vitro* and *in vivo*. This group of viruses can be obtained in high titers, *e.g.*, 10^9-10^{11} plaque-forming units per ml, and they are highly infective. The life cycle of adenovirus does not require integration into the host cell genome. The foreign genes delivered by adenovirus vectors are episomal and, therefore, have low genotoxicity to host cells. No side effects have been reported in studies of vaccination with wild-type adenovirus (Couch *et al.*, 1963; Top *et al.*, 1971), demonstrating their safety and therapeutic potential as *in vivo* gene transfer vectors.

Adenovirus vectors have been used in eukaryotic gene expression (Levrero *et al.*, 1991; Gomez-Foix *et al.*, 1992) and vaccine development (Grunhaus and Horwitz, 1992; Graham and Prevec, 1992). Recently, animal studies suggested that recombinant

adenovirus could be used for gene therapy (Stratford-Perricaudet and Perricaudet, 1991; Stratford-Perricaudet *et al.*, 1990; Rich *et al.*, 1993). Studies in administering recombinant adenovirus to different tissues include trachea instillation (Rosenfeld *et al.*, 1991; Rosenfeld *et al.*, 1992), muscle injection (Ragot *et al.*, 1993), peripheral intravenous injections (Herz and Gerard, 1993) and stereotactic inoculation into the brain (Le Gal La Salle *et al.*, 1993).

2. RETROVIRUSES

The retroviruses are a group of single-stranded RNA viruses characterized by an ability to convert their RNA to double-stranded DNA in infected cells by a process of reverse-transcription (Coffin, 1990). The resulting DNA then stably integrates into cellular chromosomes as a provirus and directs synthesis of viral proteins. The integration results in the retention of the viral gene sequences in the recipient cell and its descendants. The retroviral genome contains three genes, gag, pol, and env that code for capsid proteins, polymerase enzyme, and envelope components, respectively. A sequence found upstream from the gag gene contains a signal for packaging of the genome into virions. Two long terminal repeat (LTR) sequences are present at the 5′ and 3′ ends of the viral genome. These contain strong promoter and enhancer sequences and are also required for integration in the host cell genome (Coffin, 1990).

In order to construct a retroviral vector, a nucleic acid encoding one or more oligonucleotide or polynucleotide sequences of interest is inserted into the viral genome in the place of certain viral sequences to produce a virus that is replication-defective. In order to produce virions, a packaging cell line containing the gag, pol, and env genes but without the LTR and packaging components is constructed (Mann *et al.*, 1983). When a recombinant plasmid containing a cDNA, together with the retroviral LTR and packaging sequences is introduced into this cell line (by calcium phosphate precipitation for example), the packaging sequence allows the RNA transcript of the recombinant plasmid to be packaged into viral particles, which are then secreted into the culture media (Nicolas and Rubenstein, 1988; Temin, 1986; Mann *et al.*, 1983). The media containing the

recombinant retroviruses is then collected, optionally concentrated, and used for gene transfer. Retroviral vectors are able to infect a broad variety of cell types. However, integration and stable expression require the division of host cells (Paskind *et al.*, 1975).

A novel approach designed to allow specific targeting of retrovirus vectors was recently developed based on the chemical modification of a retrovirus by the chemical addition of lactose residues to the viral envelope. This modification could permit the specific infection of hepatocytes *via* sialoglycoprotein receptors.

A different approach to targeting of recombinant retroviruses was designed in which biotinylated antibodies against a retroviral envelope protein and against a specific cell receptor were used. The antibodies were coupled *via* the biotin components by using streptavidin (Roux *et al.*, 1989). Using antibodies against major histocompatibility complex class I and class II antigens, they demonstrated the infection of a variety of human cells that bore those surface antigens with an ecotropic virus *in vitro* (Roux *et al.*, 1989).

3. ADENO-ASSOCIATED VIRUSES

AAV (Ridgeway, 1988; Hermonat and Muzycska, 1984) is a parovirus, discovered as a contamination of adenoviral stocks. It is a ubiquitous virus (antibodies are present in 85% of the US human population) that has not been linked to any disease. It is also classified as a dependovirus, because its replications is dependent on the presence of a helper virus, such as adenovirus. Five serotypes have been isolated, of which AAV-2 is the best characterized. AAV has a single-stranded linear DNA that is encapsidated into capsid proteins VP1, VP2 and VP3 to form an icosahedral virion of 20 to 24 nm in diameter (Muzyczka and McLaughlin, 1988).

The AAV DNA is approximately 4.7 kilobases long. It contains two open reading frames and is flanked by two ITRs. There are two major genes in the AAV genome: *rep* and *cap*. The *rep* gene codes for proteins responsible for viral replications, whereas *cap* codes for capsid protein VP1-3. Each ITR forms a T-shaped hairpin structure. These terminal repeats are the only essential *cis* components of the AAV for chromosomal integration. Therefore, the AAV can be used as a vector with all viral coding

sequences removed and replaced by the cassette of genes for delivery. Three viral promoters have been identified and named p5, p19, and p40, according to their map position. Transcription from p5 and p19 results in production of rep proteins, and transcription from p40 produces the capsid proteins (Hermonat and Muzyczka, 1984).

There are several factors that prompted researchers to study the possibility of using rAAV as an expression vector One is that the requirements for delivering a gene to integrate into the host chromosome are surprisingly few. It is necessary to have the 145-bp ITRs, which are only 6% of the AAV genome. This leaves room in the vector to assemble a 4.5-kb DNA insertion. While this carrying capacity may prevent the AAV from delivering large genes, it is amply suited for delivering the antisense constructs of the present invention.

AAV is also a good choice of delivery vehicles due to its safety. There is a relatively complicated rescue mechanism: not only wild type adenovirus but also AAV genes are required to mobilize rAAV. Likewise, AAV is not pathogenic and not associated with any disease. The removal of viral coding sequences minimizes immune reactions to viral gene expression, and therefore, rAAV does not evoke an inflammatory response.

4. OTHER VIRAL VECTORS AS EXPRESSION CONSTRUCTS

Other viral vectors may be employed as expression constructs in the present invention for the delivery of oligonucleotide or polynucleotide sequences to a host cell. Vectors derived from viruses such as vaccinia virus (Ridgeway, 1988; Coupar *et al.*, 1988), lentiviruses, polio viruses and herpes viruses may be employed. They offer several attractive features for various mammalian cells (Friedmann, 1989; Ridgeway, 1988; Coupar *et al.*, 1988; Horwich *et al.*, 1990).

With the recent recognition of defective hepatitis B viruses, new insight was gained into the structure-function relationship of different viral sequences. *In vitro* studies showed that the virus could retain the ability for helper-dependent packaging and reverse transcription despite the deletion of up to 80% of its genome (Horwich *et al.*, 1990). This suggested that large portions of the genome could be replaced with foreign genetic

material. The hepatotropism and persistence (integration) were particularly attractive properties for liver-directed gene transfer. Chang *et al.* (1991) introduced the chloramphenicol acetyltransferase (CAT) gene into duck hepatitis B virus genome in the place of the polymerase, surface, and pre-surface coding sequences. It was cotransfected with wild-type virus into an avian hepatoma cell line. Culture media containing high titers of the recombinant virus were used to infect primary duckling hepatocytes. Stable CAT gene expression was detected for at least 24 days after transfection (Chang *et al.*, 1991).

5. NON-VIRAL VECTORS

In order to effect expression of the oligonucleotide or polynucleotide sequences of the present invention, the expression construct must be delivered into a cell. This delivery may be accomplished *in vitro*, as in laboratory procedures for transforming cells lines, or *in vivo* or *ex vivo*, as in the treatment of certain disease states. As described above, one preferred mechanism for delivery is *via* viral infection where the expression construct is encapsulated in an infectious viral particle.

Once the expression construct has been delivered into the cell the nucleic acid encoding the desired oligonucleotide or polynucleotide sequences may be positioned and expressed at different sites. In certain embodiments, the nucleic acid encoding the construct may be stably integrated into the genome of the cell. This integration may be in the specific location and orientation *via* homologous recombination (gene replacement) or it may be integrated in a random, non-specific location (gene augmentation). In yet further embodiments, the nucleic acid may be stably maintained in the cell as a separate, episomal segment of DNA. Such nucleic acid segments or "episomes" encode sequences sufficient to permit maintenance and replication independent of or in synchronization with the host cell cycle. How the expression construct is delivered to a cell and where in the cell the nucleic acid remains is dependent on the type of expression construct employed.

In certain embodiments of the invention, the expression construct comprising one or more oligonucleotide or polynucleotide sequences may simply consist of naked recombinant DNA or plasmids. Transfer of the construct may be performed by any

of the methods mentioned above which physically or chemically permeabilize the cell membrane. This is particularly applicable for transfer *in vitro* but it may be applied to *in vivo* use as well. Dubensky *et al.* (1984) successfully injected polyomavirus DNA in the form of calcium phosphate precipitates into liver and spleen of adult and newborn mice demonstrating active viral replication and acute infection. Benvenisty and Reshef (1986) also demonstrated that direct intraperitoneal injection of calcium phosphate-precipitated plasmids results in expression of the transfected genes. It is envisioned that DNA encoding a gene of interest may also be transferred in a similar manner *in vivo* and express the gene product.

Another embodiment of the invention for transferring a naked DNA expression construct into cells may involve particle bombardment. This method depends on the ability to accelerate DNA-coated microprojectiles to a high velocity allowing them to pierce cell membranes and enter cells without killing them (Klein *et al.*, 1987). Several devices for accelerating small particles have been developed. One such device relies on a high voltage discharge to generate an electrical current, which in turn provides the motive force (Yang *et al.*, 1990). The microprojectiles used have consisted of biologically inert substances such as tungsten or gold beads.

Selected organs including the liver, skin, and muscle tissue of rats and mice have been bombarded *in vivo* (Yang *et al.*, 1990; Zelenin *et al.*, 1991). This may require surgical exposure of the tissue or cells, to eliminate any intervening tissue between the gun and the target organ, *i.e. ex vivo* treatment. Again, DNA encoding a particular gene may be delivered *via* this method and still be incorporated by the present invention.

ANTISENSE OLIGONUCLEOTIDES

The end result of the flow of genetic information is the synthesis of protein. DNA is transcribed by polymerases into messenger RNA and translated on the ribosome to yield a folded, functional protein. Thus there are several steps along the route where protein synthesis can be inhibited. The native DNA segment coding for a polypeptide described herein, as all such mammalian DNA strands, has two strands: a sense strand and

an antisense strand held together by hydrogen bonding. The messenger RNA coding for polypeptide has the same nucleotide sequence as the sense DNA strand except that the DNA thymidine is replaced by uridine. Thus, synthetic antisense nucleotide sequences will bind to a mRNA and inhibit expression of the protein encoded by that mRNA.

The targeting of antisense oligonucleotides to mRNA is thus one mechanism to shut down protein synthesis, and, consequently, represents a powerful and targeted therapeutic approach. For example, the synthesis of polygalactauronase and the muscarine type 2 acetylcholine receptor are inhibited by antisense oligonucleotides directed to their respective mRNA sequences (U. S. Patent 5,739,119 and U. S. Patent 5,759,829, each specifically incorporated herein by reference in its entirety). Further, examples of antisense inhibition have been demonstrated with the nuclear protein cyclin, the multiple drug resistance gene (MDG1), ICAM-1, E-selectin, STK-1, striatal $GABA_A$ receptor and human EGF (Jaskulski *et al.*, 1988; Vasanthakumar and Ahmed, 1989; Peris *et al.*, 1998; U. S. Patent 5,801,154; U. S. Patent 5,789,573; U. S. Patent 5,718,709 and U. S. Patent 5,610,288, each specifically incorporated herein by reference in its entirety). Antisense constructs have also been described that inhibit and can be used to treat a variety of abnormal cellular proliferations, *e.g.* cancer (U. S. Patent 5,747,470; U. S. Patent 5,591,317 and U. S. Patent 5,783,683, each specifically incorporated herein by reference in its entirety).

Therefore, in exemplary embodiments, the invention provides oligonucleotide sequences that comprise all, or a portion of, any sequence that is capable of specifically binding to polynucleotide sequence described herein, or a complement thereof. In one embodiment, the antisense oligonucleotides comprise DNA or derivatives thereof. In another embodiment, the oligonucleotides comprise RNA or derivatives thereof. In a third embodiment, the oligonucleotides are modified DNAs comprising a phosphorothioated modified backbone. In a fourth embodiment, the oligonucleotide sequences comprise peptide nucleic acids or derivatives thereof. In each case, preferred compositions comprise a sequence region that is complementary, and more preferably

substantially-complementary, and even more preferably, completely complementary to one or more portions of polynucleotides disclosed herein.

Selection of antisense compositions specific for a given gene sequence is based upon analysis of the chosen target sequence (*i.e.* in these illustrative examples the rat and human sequences) and determination of secondary structure, T_m, binding energy, relative stability, and antisense compositions were selected based upon their relative inability to form dimers, hairpins, or other secondary structures that would reduce or prohibit specific binding to the target mRNA in a host cell.

Highly preferred target regions of the mRNA, are those which are at or near the AUG translation initiation codon, and those sequences which were substantially complementary to 5' regions of the mRNA. These secondary structure analyses and target site selection considerations were performed using v.4 of the OLIGO primer analysis software (Rychlik, 1997) and the BLASTN 2.0.5 algorithm software (Altschul *et al.,* 1997).

The use of an antisense delivery method employing a short peptide vector, termed MPG (27 residues), is also contemplated. The MPG peptide contains a hydrophobic domain derived from the fusion sequence of HIV gp41 and a hydrophilic domain from the nuclear localization sequence of SV40 T-antigen (Morris *et al.*, 1997). It has been demonstrated that several molecules of the MPG peptide coat the antisense oligonucleotides and can be delivered into cultured mammalian cells in less than 1 hour with relatively high efficiency (90%). Further, the interaction with MPG strongly increases both the stability of the oligonucleotide to nuclease and the ability to cross the plasma membrane (Morris *et al.*, 1997).

RIBOZYMES

Although proteins traditionally have been used for catalysis of nucleic acids, another class of macromolecules has emerged as useful in this endeavor. Ribozymes are RNA-protein complexes that cleave nucleic acids in a site-specific fashion. Ribozymes have specific catalytic domains that possess endonuclease activity (Kim and Cech, 1987; Gerlach *et al.*, 1987; Forster and Symons, 1987). For example, a large number of

ribozymes accelerate phosphoester transfer reactions with a high degree of specificity, often cleaving only one of several phosphoesters in an oligonucleotide substrate (Cech *et al.*, 1981; Michel and Westhof, 1990; Reinhold-Hurek and Shub, 1992). This specificity has been attributed to the requirement that the substrate bind via specific base-pairing interactions to the internal guide sequence ("IGS") of the ribozyme prior to chemical reaction.

Ribozyme catalysis has primarily been observed as part of sequence-specific cleavage/ligation reactions involving nucleic acids (Joyce, 1989; Cech *et al.*, 1981). For example, U. S. Patent No. 5,354,855 (specifically incorporated herein by reference) reports that certain ribozymes can act as endonucleases with a sequence specificity greater than that of known ribonucleases and approaching that of the DNA restriction enzymes. Thus, sequence-specific ribozyme-mediated inhibition of gene expression may be particularly suited to therapeutic applications (Scanlon *et al.*, 1991; Sarver *et al.*, 1990). Recently, it was reported that ribozymes elicited genetic changes in some cells lines to which they were applied; the altered genes included the oncogenes H-*ras*, c-*fos* and genes of HIV. Most of this work involved the modification of a target mRNA, based on a specific mutant codon that is cleaved by a specific ribozyme.

Six basic varieties of naturally-occurring enzymatic RNAs are known presently. Each can catalyze the hydrolysis of RNA phosphodiester bonds *in trans* (and thus can cleave other RNA molecules) under physiological conditions. In general, enzymatic nucleic acids act by first binding to a target RNA. Such binding occurs through the target binding portion of a enzymatic nucleic acid which is held in close proximity to an enzymatic portion of the molecule that acts to cleave the target RNA. Thus, the enzymatic nucleic acid first recognizes and then binds a target RNA through complementary base-pairing, and once bound to the correct site, acts enzymatically to cut the target RNA. Strategic cleavage of such a target RNA will destroy its ability to direct synthesis of an encoded protein. After an enzymatic nucleic acid has bound and cleaved its RNA target, it is released from that RNA to search for another target and can repeatedly bind and cleave new targets.

The enzymatic nature of a ribozyme is advantageous over many technologies, such as antisense technology (where a nucleic acid molecule simply binds to a nucleic acid target to block its translation) since the concentration of ribozyme necessary to affect a therapeutic treatment is lower than that of an antisense oligonucleotide. This advantage reflects the ability of the ribozyme to act enzymatically. Thus, a single ribozyme molecule is able to cleave many molecules of target RNA. In addition, the ribozyme is a highly specific inhibitor, with the specificity of inhibition depending not only on the base pairing mechanism of binding to the target RNA, but also on the mechanism of target RNA cleavage. Single mismatches, or base-substitutions, near the site of cleavage can completely eliminate catalytic activity of a ribozyme. Similar mismatches in antisense molecules do not prevent their action (Woolf *et al.*, 1992). Thus, the specificity of action of a ribozyme is greater than that of an antisense oligonucleotide binding the same RNA site.

The enzymatic nucleic acid molecule may be formed in a hammerhead, hairpin, a hepatitis δ virus, group I intron or RNaseP RNA (in association with an RNA guide sequence) or Neurospora VS RNA motif. Examples of hammerhead motifs are described by Rossi *et al.* (1992). Examples of hairpin motifs are described by Hampel *et al.* (Eur. Pat. Appl. Publ. No. EP 0360257), Hampel and Tritz (1989), Hampel *et al.* (1990) and U. S. Patent 5,631,359 (specifically incorporated herein by reference). An example of the hepatitis δ virus motif is described by Perrotta and Been (1992); an example of the RNaseP motif is described by Guerrier-Takada *et al.* (1983); Neurospora VS RNA ribozyme motif is described by Collins (Saville and Collins, 1990; Saville and Collins, 1991; Collins and Olive, 1993); and an example of the Group I intron is described in (U. S. Patent 4,987,071, specifically incorporated herein by reference). All that is important in an enzymatic nucleic acid molecule of this invention is that it has a specific substrate binding site which is complementary to one or more of the target gene RNA regions, and that it have nucleotide sequences within or surrounding that substrate binding site which impart an RNA cleaving activity to the molecule. Thus the ribozyme constructs need not be limited to specific motifs mentioned herein.

In certain embodiments, it may be important to produce enzymatic cleaving agents which exhibit a high degree of specificity for the RNA of a desired target, such as one of the sequences disclosed herein. The enzymatic nucleic acid molecule is preferably targeted to a highly conserved sequence region of a target mRNA. Such enzymatic nucleic acid molecules can be delivered exogenously to specific cells as required. Alternatively, the ribozymes can be expressed from DNA or RNA vectors that are delivered to specific cells.

Small enzymatic nucleic acid motifs (*e.g.*, of the hammerhead or the hairpin structure) may also be used for exogenous delivery. The simple structure of these molecules increases the ability of the enzymatic nucleic acid to invade targeted regions of the mRNA structure. Alternatively, catalytic RNA molecules can be expressed within cells from eukaryotic promoters (*e.g.*, Scanlon *et al.*, 1991; Kashani-Sabet *et al.*, 1992; Dropulic *et al.*, 1992; Weerasinghe *et al.*, 1991; Ojwang *et al.*, 1992; Chen *et al.*, 1992; Sarver *et al.*, 1990). Those skilled in the art realize that any ribozyme can be expressed in eukaryotic cells from the appropriate DNA vector. The activity of such ribozymes can be augmented by their release from the primary transcript by a second ribozyme (Int. Pat. Appl. Publ. No. WO 93/23569, and Int. Pat. Appl. Publ. No. WO 94/02595, both hereby incorporated by reference; Ohkawa *et al.*, 1992; Taira *et al.*, 1991; and Ventura *et al.*, 1993).

Ribozymes may be added directly, or can be complexed with cationic lipids, lipid complexes, packaged within liposomes, or otherwise delivered to target cells. The RNA or RNA complexes can be locally administered to relevant tissues *ex vivo*, or *in vivo* through injection, aerosol inhalation, infusion pump or stent, with or without their incorporation in biopolymers.

Ribozymes may be designed as described in Int. Pat. Appl. Publ. No. WO 93/23569 and Int. Pat. Appl. Publ. No. WO 94/02595, each specifically incorporated herein by reference) and synthesized to be tested *in vitro* and *in vivo*, as described. Such ribozymes can also be optimized for delivery. While specific examples are provided, those in the art will recognize that equivalent RNA targets in other species can be utilized when necessary.

Hammerhead or hairpin ribozymes may be individually analyzed by computer folding (Jaeger *et al.*, 1989) to assess whether the ribozyme sequences fold into the appropriate secondary structure. Those ribozymes with unfavorable intramolecular interactions between the binding arms and the catalytic core are eliminated from consideration. Varying binding arm lengths can be chosen to optimize activity. Generally, at least 5 or so bases on each arm are able to bind to, or otherwise interact with, the target RNA.

Ribozymes of the hammerhead or hairpin motif may be designed to anneal to various sites in the mRNA message, and can be chemically synthesized. The method of synthesis used follows the procedure for normal RNA synthesis as described in Usman *et al.* (1987) and in Scaringe *et al.* (1990) and makes use of common nucleic acid protecting and coupling groups, such as dimethoxytrityl at the 5′-end, and phosphoramidites at the 3′-end. Average stepwise coupling yields are typically >98%. Hairpin ribozymes may be synthesized in two parts and annealed to reconstruct an active ribozyme (Chowrira and Burke, 1992). Ribozymes may be modified extensively to enhance stability by modification with nuclease resistant groups, for example, 2′-amino, 2′-C-allyl, 2′-fluoro, 2′-O-methyl, 2′-H (for a review see *e.g.*, Usman and Cedergren, 1992). Ribozymes may be purified by gel electrophoresis using general methods or by high pressure liquid chromatography and resuspended in water.

Ribozyme activity can be optimized by altering the length of the ribozyme binding arms, or chemically synthesizing ribozymes with modifications that prevent their degradation by serum ribonucleases (see *e.g.*, Int. Pat. Appl. Publ. No. WO 92/07065; Perrault *et al*, 1990; Pieken *et al.*, 1991; Usman and Cedergren, 1992; Int. Pat. Appl. Publ. No. WO 93/15187; Int. Pat. Appl. Publ. No. WO 91/03162; Eur. Pat. Appl. Publ. No. 92110298.4; U. S. Patent 5,334,711; and Int. Pat. Appl. Publ. No. WO 94/13688, which describe various chemical modifications that can be made to the sugar moieties of enzymatic RNA molecules), modifications which enhance their efficacy in cells, and removal of stem II bases to shorten RNA synthesis times and reduce chemical requirements.

Sullivan *et al.* (Int. Pat. Appl. Publ. No. WO 94/02595) describes the general methods for delivery of enzymatic RNA molecules. Ribozymes may be administered to cells by a variety of methods known to those familiar to the art, including, but not restricted to, encapsulation in liposomes, by iontophoresis, or by incorporation into other vehicles, such as hydrogels, cyclodextrins, biodegradable nanocapsules, and bioadhesive microspheres. For some indications, ribozymes may be directly delivered *ex vivo* to cells or tissues with or without the aforementioned vehicles. Alternatively, the RNA/vehicle combination may be locally delivered by direct inhalation, by direct injection or by use of a catheter, infusion pump or stent. Other routes of delivery include, but are not limited to, intravascular, intramuscular, subcutaneous or joint injection, aerosol inhalation, oral (tablet or pill form), topical, systemic, ocular, intraperitoneal and/or intrathecal delivery. More detailed descriptions of ribozyme delivery and administration are provided in Int. Pat. Appl. Publ. No. WO 94/02595 and Int. Pat. Appl. Publ. No. WO 93/23569, each specifically incorporated herein by reference.

Another means of accumulating high concentrations of a ribozyme(s) within cells is to incorporate the ribozyme-encoding sequences into a DNA expression vector. Transcription of the ribozyme sequences are driven from a promoter for eukaryotic RNA polymerase I (pol I), RNA polymerase II (pol II), or RNA polymerase III (pol III). Transcripts from pol II or pol III promoters will be expressed at high levels in all cells; the levels of a given pol II promoter in a given cell type will depend on the nature of the gene regulatory sequences (enhancers, silencers, *etc.*) present nearby. Prokaryotic RNA polymerase promoters may also be used, providing that the prokaryotic RNA polymerase enzyme is expressed in the appropriate cells (Elroy-Stein and Moss, 1990; Gao and Huang, 1993; Lieber *et al.*, 1993; Zhou *et al.*, 1990). Ribozymes expressed from such promoters can function in mammalian cells (*e.g.* Kashani-Saber *et al.*, 1992; Ojwang *et al.*, 1992; Chen *et al.*, 1992; Yu *et al.*, 1993; L'Huillier *et al.*, 1992; Lisziewicz *et al.*, 1993). Such transcription units can be incorporated into a variety of vectors for introduction into mammalian cells, including but not restricted to, plasmid DNA vectors, viral DNA vectors

(such as adenovirus or adeno-associated vectors), or viral RNA vectors (such as retroviral, semliki forest virus, sindbis virus vectors).

Ribozymes may be used as diagnostic tools to examine genetic drift and mutations within diseased cells. They can also be used to assess levels of the target RNA molecule. The close relationship between ribozyme activity and the structure of the target RNA allows the detection of mutations in any region of the molecule which alters the base-pairing and three-dimensional structure of the target RNA. By using multiple ribozymes, one may map nucleotide changes which are important to RNA structure and function *in vitro*, as well as in cells and tissues. Cleavage of target RNAs with ribozymes may be used to inhibit gene expression and define the role (essentially) of specified gene products in the progression of disease. In this manner, other genetic targets may be defined as important mediators of the disease. These studies will lead to better treatment of the disease progression by affording the possibility of combinational therapies (*e.g.*, multiple ribozymes targeted to different genes, ribozymes coupled with known small molecule inhibitors, or intermittent treatment with combinations of ribozymes and/or other chemical or biological molecules). Other *in vitro* uses of ribozymes are well known in the art, and include detection of the presence of mRNA associated with an IL-5 related condition. Such RNA is detected by determining the presence of a cleavage product after treatment with a ribozyme using standard methodology.

PEPTIDE NUCLEIC ACIDS

In certain embodiments, the inventors contemplate the use of peptide nucleic acids (PNAs) in the practice of the methods of the invention. PNA is a DNA mimic in which the nucleobases are attached to a pseudopeptide backbone (Good and Nielsen, 1997). PNA is able to be utilized in a number methods that traditionally have used RNA or DNA. Often PNA sequences perform better in techniques than the corresponding RNA or DNA sequences and have utilities that are not inherent to RNA or DNA. A review of PNA including methods of making, characteristics of, and methods of using, is provided by Corey (1997) and is incorporated herein by reference. As such, in certain embodiments,

one may prepare PNA sequences that are complementary to one or more portions of the ACE mRNA sequence, and such PNA compositions may be used to regulate, alter, decrease, or reduce the translation of ACE-specific mRNA, and thereby alter the level of ACE activity in a host cell to which such PNA compositions have been administered.

PNAs have 2-aminoethyl-glycine linkages replacing the normal phosphodiester backbone of DNA (Nielsen *et al.*, 1991; Hanvey *et al.*, 1992; Hyrup and Nielsen, 1996; Neilsen, 1996). This chemistry has three important consequences: firstly, in contrast to DNA or phosphorothioate oligonucleotides, PNAs are neutral molecules; secondly, PNAs are achiral, which avoids the need to develop a stereoselective synthesis; and thirdly, PNA synthesis uses standard Boc (Dueholm *et al.*, 1994) or Fmoc (Thomson *et al.*, 1995) protocols for solid-phase peptide synthesis, although other methods, including a modified Merrifield method, have been used (Christensen *et al.*, 1995).

PNA monomers or ready-made oligomers are commercially available from PerSeptive Biosystems (Framingham, MA). PNA syntheses by either Boc or Fmoc protocols are straightforward using manual or automated protocols (Norton *et al.*, 1995). The manual protocol lends itself to the production of chemically modified PNAs or the simultaneous synthesis of families of closely related PNAs.

As with peptide synthesis, the success of a particular PNA synthesis will depend on the properties of the chosen sequence. For example, while in theory PNAs can incorporate any combination of nucleotide bases, the presence of adjacent purines can lead to deletions of one or more residues in the product. In expectation of this difficulty, it is suggested that, in producing PNAs with adjacent purines, one should repeat the coupling of residues likely to be added inefficiently. This should be followed by the purification of PNAs by reverse-phase high-pressure liquid chromatography (Norton *et al.*, 1995) providing yields and purity of product similar to those observed during the synthesis of peptides.

Modifications of PNAs for a given application may be accomplished by coupling amino acids during solid-phase synthesis or by attaching compounds that contain a carboxylic acid group to the exposed N-terminal amine. Alternatively, PNAs can be

modified after synthesis by coupling to an introduced lysine or cysteine. The ease with which PNAs can be modified facilitates optimization for better solubility or for specific functional requirements. Once synthesized, the identity of PNAs and their derivatives can be confirmed by mass spectrometry. Several studies have made and utilized modifications of PNAs (Norton *et al.*, 1995; Haaima *et al.*, 1996; Stetsenko *et al.*, 1996; Petersen *et al.*, 1995; Ulmann *et al.*, 1996; Koch *et al.*, 1995; Orum *et al.*, 1995; Footer *et al.*, 1996; Griffith *et al.*, 1995; Kremsky *et al.*, 1996; Pardridge *et al.*, 1995; Boffa *et al.*, 1995; Landsdorp *et al.*, 1996; Gambacorti-Passerini *et al.*, 1996; Armitage *et al.*, 1997; Seeger *et al.*, 1997; Ruskowski *et al.*, 1997). U.S. Patent No. 5,700,922 discusses PNA-DNA-PNA chimeric molecules and their uses in diagnostics, modulating protein in organisms, and treatment of conditions susceptible to therapeutics.

In contrast to DNA and RNA, which contain negatively charged linkages, the PNA backbone is neutral. In spite of this dramatic alteration, PNAs recognize complementary DNA and RNA by Watson-Crick pairing (Egholm *et al.*, 1993), validating the initial modeling by Nielsen *et al.* (1991). PNAs lack 3′ to 5′ polarity and can bind in either parallel or antiparallel fashion, with the antiparallel mode being preferred (Egholm *et al.*, 1993).

Hybridization of DNA oligonucleotides to DNA and RNA is destabilized by electrostatic repulsion between the negatively charged phosphate backbones of the complementary strands. By contrast, the absence of charge repulsion in PNA-DNA or PNA-RNA duplexes increases the melting temperature (T_m) and reduces the dependence of T_m on the concentration of mono- or divalent cations (Nielsen *et al.*, 1991). The enhanced rate and affinity of hybridization are significant because they are responsible for the surprising ability of PNAs to perform strand invasion of complementary sequences within relaxed double-stranded DNA. In addition, the efficient hybridization at inverted repeats suggests that PNAs can recognize secondary structure effectively within double-stranded DNA. Enhanced recognition also occurs with PNAs immobilized on surfaces, and Wang *et al.* have shown that support-bound PNAs can be used to detect hybridization events (Wang *et al.*, 1996).

One might expect that tight binding of PNAs to complementary sequences would also increase binding to similar (but not identical) sequences, reducing the sequence specificity of PNA recognition. As with DNA hybridization, however, selective recognition can be achieved by balancing oligomer length and incubation temperature. Moreover, selective hybridization of PNAs is encouraged by PNA-DNA hybridization being less tolerant of base mismatches than DNA-DNA hybridization. For example, a single mismatch within a 16 bp PNA-DNA duplex can reduce the T_m by up to 15°C (Egholm *et al.*, 1993). This high level of discrimination has allowed the development of several PNA-based strategies for the analysis of point mutations (Wang *et al.*, 1996; Carlsson *et al.*, 1996; Thiede *et al.*, 1996; Webb and Hurskainen, 1996; Perry-O'Keefe *et al.*, 1996).

High-affinity binding provides clear advantages for molecular recognition and the development of new applications for PNAs. For example, 11-13 nucleotide PNAs inhibit the activity of telomerase, a ribonucleo-protein that extends telomere ends using an essential RNA template, while the analogous DNA oligomers do not (Norton *et al.*, 1996).

Neutral PNAs are more hydrophobic than analogous DNA oligomers, and this can lead to difficulty solubilizing them at neutral pH, especially if the PNAs have a high purine content or if they have the potential to form secondary structures. Their solubility can be enhanced by attaching one or more positive charges to the PNA termini (Nielsen *et al.*, 1991).

Findings by Allfrey and colleagues suggest that strand invasion will occur spontaneously at sequences within chromosomal DNA (Boffa *et al.*, 1995; Boffa *et al.*, 1996). These studies targeted PNAs to triplet repeats of the nucleotides CAG and used this recognition to purify transcriptionally active DNA (Boffa *et al.*, 1995) and to inhibit transcription (Boffa *et al.*, 1996). This result suggests that if PNAs can be delivered within cells then they will have the potential to be general sequence-specific regulators of gene expression. Studies and reviews concerning the use of PNAs as antisense and anti-gene agents include Nielsen *et al.* (1993b), Hanvey *et al.* (1992), and Good and Nielsen (1997).

Koppelhus *et al.* (1997) have used PNAs to inhibit HIV-1 inverse transcription, showing that PNAs may be used for antiviral therapies.

Methods of characterizing the antisense binding properties of PNAs are discussed in Rose (1993) and Jensen *et al.* (1997). Rose uses capillary gel electrophoresis to determine binding of PNAs to their complementary oligonucleotide, measuring the relative binding kinetics and stoichiometry. Similar types of measurements were made by Jensen *et al.* using BIAcore™ technology.

Other applications of PNAs include use in DNA strand invasion (Nielsen *et al.,* 1991), antisense inhibition (Hanvey *et al.*, 1992), mutational analysis (Orum *et al.*, 1993), enhancers of transcription (Mollegaard *et al.*, 1994), nucleic acid purification (Orum *et al.*, 1995), isolation of transcriptionally active genes (Boffa *et al.*, 1995), blocking of transcription factor binding (Vickers *et al.*, 1995), genome cleavage (Veselkov *et al.*, 1996), biosensors (Wang *et al.*, 1996), *in situ* hybridization (Thisted *et al.*, 1996), and in a alternative to Southern blotting (Perry-O'Keefe, 1996).

POLYPEPTIDE COMPOSITIONS

The present invention, in other aspects, provides polypeptide compositions. Generally, a polypeptide of the invention will be an isolated polypeptide (or an epitope, variant, or active fragment thereof) derived from a mammalian species. Preferably, the polypeptide is encoded by a polynucleotide sequence disclosed herein or a sequence which hybridizes under moderately stringent conditions to a polynucleotide sequence disclosed herein. Alternatively, the polypeptide may be defined as a polypeptide which comprises a contiguous amino acid sequence from an amino acid sequence disclosed herein, or which polypeptide comprises an entire amino acid sequence disclosed herein.

In the present invention, a polypeptide composition is also understood to comprise one or more polypeptides that are immunologically reactive with antibodies generated against a polypeptide of the invention, particularly a polypeptide having the amino acid sequence disclosed in SEQ ID NO: 786, 787, 791, 793, 795, 797-799, 806, 809,

1670-1675, or to active fragments, or to variants or biological functional equivalents thereof.

Likewise, a polypeptide composition of the present invention is understood to comprise one or more polypeptides that are capable of eliciting antibodies that are immunologically reactive with one or more polypeptides encoded by one or more contiguous nucleic acid sequences contained in SEQ ID NO: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 and 1676 or to active fragments, or to variants thereof, or to one or more nucleic acid sequences which hybridize to one or more of these sequences under conditions of moderate to high stringency. Particularly illustrative polypeptides include the amino acid sequences disclosed in SEQ ID NO: 786, 787, 791, 793, 795, 797-799, 806, 809, 827 and 1670-1675..

As used herein, an active fragment of a polypeptide includes a whole or a portion of a polypeptide which is modified by conventional techniques, *e.g.*, mutagenesis, or by addition, deletion, or substitution, but which active fragment exhibits substantially the same structure function, antigenicity, etc., as a polypeptide as described herein.

In certain illustrative embodiments, the polypeptides of the invention will comprise at least an immunogenic portion of a lung tumor protein or a variant thereof, as described herein. As noted above, a " lung tumor protein" is a protein that is expressed by lung tumor cells. Proteins that are lung tumor proteins also react detectably within an immunoassay (such as an ELISA) with antisera from a patient with lung cancer. Polypeptides as described herein may be of any length. Additional sequences derived from the native protein and/or heterologous sequences may be present, and such sequences may (but need not) possess further immunogenic or antigenic properties.

An "immunogenic portion," as used herein is a portion of a protein that is recognized (*i.e.,* specifically bound) by a B-cell and/or T-cell surface antigen receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid residues of a lung tumor protein or a variant thereof. Certain preferred immunogenic portions include peptides in which an N-terminal leader sequence and/or transmembrane domain have been deleted. Other preferred immunogenic portions may contain a small N- and/or C-terminal deletion (*e.g.,* 1-30 amino acids, preferably 5-15 amino acids), relative to the mature protein.

Immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press, 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with antigen-specific antibodies, antisera and/or T-cell lines or clones. As used herein, antisera and antibodies are "antigen-specific" if they specifically bind to an antigen (*i.e.,* they react with the protein in an ELISA or other immunoassay, and do not react detectably with unrelated proteins). Such antisera and antibodies may be prepared as described herein, and using well known techniques. An immunogenic portion of a native lung tumor protein is a portion that reacts with such antisera and/or T-cells at a level that is not substantially less than the reactivity of the full length polypeptide (*e.g.,* in an ELISA and/or T-cell reactivity assay). Such immunogenic portions may react within such assays at a level that is similar to or greater than the reactivity of the full length polypeptide. Such screens may generally be performed using methods well known to those of ordinary skill in the art, such as those described in Harlow and Lane, *Antibodies: A Laboratory Manual,* Cold Spring Harbor Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support and contacted with patient sera to allow binding of antibodies within the sera to the immobilized polypeptide. Unbound sera may then be removed and bound antibodies detected using, for example, ^{125}I-labeled Protein A.

As noted above, a composition may comprise a variant of a native lung tumor protein. A polypeptide "variant," as used herein, is a polypeptide that differs from a native lung tumor protein in one or more substitutions, deletions, additions and/or insertions, such that the immunogenicity of the polypeptide is not substantially diminished. In other words, the ability of a variant to react with antigen-specific antisera may be enhanced or unchanged, relative to the native protein, or may be diminished by less than 50%, and preferably less than 20%, relative to the native protein. Such variants may generally be identified by modifying one of the above polypeptide sequences and evaluating the reactivity of the modified polypeptide with antigen-specific antibodies or antisera as described herein. Preferred variants include those in which one or more portions, such as an N-terminal leader sequence or transmembrane domain, have been removed. Other preferred variants include variants in which a small portion (*e.g.,* 1-30 amino acids, preferably 5-15 amino acids) has been removed from the N- and/or C-terminal of the mature protein.

Polypeptide variants encompassed by the present invention include those exhibiting at least about 70%, 75%, 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, or 99% or more identity (determined as described above) to the polypeptides disclosed herein.

Preferably, a variant contains conservative substitutions. A "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide chemistry would expect the secondary structure and hydropathic nature of the polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative

changes include: (1) ala, pro, gly, glu, asp, gln, asn, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or alternatively, contain nonconservative changes. In a preferred embodiment, variant polypeptides differ from a native sequence by substitution, deletion or addition of five amino acids or fewer. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino acids that have minimal influence on the immunogenicity, secondary structure and hydropathic nature of the polypeptide.

As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein, which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (*e.g.*, poly-His), or to enhance binding of the polypeptide to a solid support. For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

Polypeptides may be prepared using any of a variety of well known techniques. Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression vectors known to those of ordinary skill in the art. Expression may be achieved in any appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host cells include prokaryotes, yeast, and higher eukaryotic cells, such as mammalian cells and plant cells. Preferably, the host cells employed are *E. coli*, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete recombinant protein or polypeptide into culture media may be first concentrated using a commercially available filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.

Portions and other variants having less than about 100 amino acids, and generally less than about 50 amino acids, may also be generated by synthetic means, using

techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino acids are sequentially added to a growing amino acid chain. *See* Merrifield, *J. Am. Chem. Soc. 85*:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Perkin Elmer/Applied BioSystems Division (Foster City, CA), and may be operated according to the manufacturer's instructions.

Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises at least one polypeptide as described herein and an unrelated sequence, such as a known tumor protein. A fusion partner may, for example, assist in providing T helper epitopes (an immunological fusion partner), preferably T helper epitopes recognized by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain preferred fusion partners are both immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.

Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide components may be assembled separately, and ligated into an appropriate expression vector. The 3' end of the DNA sequence encoding one polypeptide component is ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

A peptide linker sequence may be employed to separate the first and second polypeptide components by a distance sufficient to ensure that each polypeptide folds into

its secondary and tertiary structures. Such a peptide linker sequence is incorporated into the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following factors: (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a secondary structure that could interact with functional epitopes on the first and second polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as linkers include those disclosed in Maratea *et al.*, *Gene 40*:39-46, 1985; Murphy *et al.*, *Proc. Natl. Acad. Sci. USA 83*:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not required when the first and second polypeptides have non-essential N-terminal amino acid regions that can be used to separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

Fusion proteins are also provided. Such proteins comprise a polypeptide as described herein together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (*see*, for example, Stoute *et al.* *New Engl. J. Med.*, *336*:86-91, 1997).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium Haemophilus influenza B (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a

Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The lipid tail ensures optimal presentation of the antigen to antigen presenting cells. Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemaglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as amidase LYTA (encoded by the LytA gene; *Gene 43*:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible for the affinity to the choline or to some choline analogues such as DEAE. This property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see Biotechnology 10*:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

In general, polypeptides (including fusion proteins) and polynucleotides as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that is removed from its original environment. For example, a naturally-occurring protein is isolated if it is separated from some or all of the coexisting materials in the natural system. Preferably, such polypeptides are at least about 90% pure, more preferably at least about 95% pure and most preferably at least about 99% pure. A polynucleotide is considered to be isolated if, for example, it is cloned into a vector that is not a part of the natural environment.

BINDING AGENTS

The present invention further provides agents, such as antibodies and antigen-binding fragments thereof, that specifically bind to a lung tumor protein. As used herein, an antibody, or antigen-binding fragment thereof, is said to "specifically bind" to a lung tumor protein if it reacts at a detectable level (within, for example, an ELISA) with a lung tumor protein, and does not react detectably with unrelated proteins under similar conditions. As used herein, "binding" refers to a noncovalent association between two separate molecules such that a complex is formed. The ability to bind may be evaluated by, for example, determining a binding constant for the formation of the complex. The binding constant is the value obtained when the concentration of the complex is divided by the product of the component concentrations. In general, two compounds are said to "bind," in the context of the present invention, when the binding constant for complex formation exceeds about 10^3 L/mol. The binding constant may be determined using methods well known in the art.

Binding agents may be further capable of differentiating between patients with and without a cancer, such as lung cancer, using the representative assays provided herein. In other words, antibodies or other binding agents that bind to a lung tumor protein will generate a signal indicating the presence of a cancer in at least about 20% of patients with the disease, and will generate a negative signal indicating the absence of the disease in at least about 90% of individuals without the cancer. To determine whether a binding agent satisfies this requirement, biological samples (*e.g.,* blood, sera, sputum, urine and/or tumor biopsies) from patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an

RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an antibody or an antigen-binding fragment thereof. Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. *See, e.g.,* Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (*e.g.,* mice, rats, rabbits, sheep or goats). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically. Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity chromatography using the polypeptide coupled to a suitable solid support.

Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol. 6*:511-519, 1976, and improvements thereto. Briefly, these methods involve the preparation of immortal cell lines capable of producing antibodies having the desired specificity (*i.e.*, reactivity with the polypeptide of interest). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen cells and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection.

After a sufficient time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are selected and their culture supernatants tested for binding activity against the polypeptide. Hybridomas having high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the yield, such as injection of the hybridoma cell line into the peritoneal cavity of a suitable vertebrate host, such as a mouse. Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process in, for example, an affinity chromatography step.

Within certain embodiments, the use of antigen-binding fragments of antibodies may be preferred. Such fragments include Fab fragments, which may be prepared using standard techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988) and digested by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be separated by affinity chromatography on protein A bead columns.

Monoclonal antibodies of the present invention may be coupled to one or more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include ^{90}Y, ^{123}I, ^{125}I, ^{131}I, ^{186}Re, ^{188}Re, ^{211}At, and ^{212}Bi. Preferred drugs include methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diptheria toxin, cholera toxin, gelonin, Pseudomonas exotoxin, Shigella toxin, and pokeweed antiviral protein.

A therapeutic agent may be coupled (*e.g.*, covalently bonded) to a suitable monoclonal antibody either directly or indirectly (*e.g.*, via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent

capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-containing group, such as an anhydride or an acid halide, or with an alkyl group containing a good leaving group (*e.g.*, a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A linker group can also serve to increase the chemical reactivity of a substituent on an agent or an antibody, and thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional or polyfunctional reagents, both homo- and hetero-functional (such as those described in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, *e.g.*, U.S. Patent No. 4,671,958, to Rodwell *et al.*

Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction of a disulfide bond (*e.g.*, U.S. Patent No. 4,489,710, to Spitler), by irradiation of a photolabile bond (*e.g.*, U.S. Patent No. 4,625,014, to Senter *et al.*), by hydrolysis of derivatized amino acid side chains (*e.g.*, U.S. Patent No. 4,638,045, to Kohn *et al.*), by serum complement-mediated hydrolysis (*e.g.*, U.S. Patent No. 4,671,958, to Rodwell *et al.*), and acid-catalyzed hydrolysis (*e.g.*, U.S. Patent No. 4,569,789, to Blattler *et al.*).

It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In

another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or linkers that provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (*e.g.*, U.S. Patent No. 4,507,234, to Kato *et al.*), peptides and polysaccharides such as aminodextran (*e.g.*, U.S. Patent No. 4,699,784, to Shih *et al.*). A carrier may also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (*e.g.*, U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating compounds that include those containing nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For example, U.S. Patent No. 4,673,562, to Davison *et al.* discloses representative chelating compounds and their synthesis.

A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody used, the antigen density on the tumor, and the rate of clearance of the antibody.

T CELLS

Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for a lung tumor protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be isolated from bone marrow, peripheral blood, or a fraction of bone marrow or peripheral blood of a patient, using a commercially available cell separation system, such as the Isolex™ System, available from

Nexell Therapeutics, Inc. (Irvine, CA; see also U.S. Patent No. 5,240,856; U.S. Patent No. 5,215,926; WO 89/06280; WO 91/16116 and WO 92/07243). Alternatively, T cells may be derived from related or unrelated humans, non-human mammals, cell lines or cultures.

T cells may be stimulated with a lung tumor polypeptide, polynucleotide encoding a lung tumor polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, a lung tumor polypeptide or polynucleotide is present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for a lung tumor polypeptide if the T cells specifically proliferate, secrete cytokines or kill target cells coated with the polypeptide or expressing a gene encoding the polypeptide. T cell specificity may be evaluated using any of a variety of standard techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation, compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen *et al.*, *Cancer Res. 54*:1065-1070, 1994. Alternatively, detection of the proliferation of T cells may be accomplished by a variety of known techniques. For example, T cell proliferation can be detected by measuring an increased rate of DNA synthesis (*e.g.*, by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated thymidine incorporated into DNA). Contact with a lung tumor polypeptide (100 ng/ml - 100 μg/ml, preferably 200 ng/ml - 25 μg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells. Contact as described above for 2-3 hours should result in activation of the T cells, as measured using standard cytokine assays in which a two fold increase in the level of cytokine release (*e.g.*, TNF or IFN-γ) is indicative of T cell activation (*see* Coligan *et al.*, Current Protocols in Immunology, vol. 1, Wiley Interscience (Greene 1998)). T cells that have been activated in response to a lung tumor polypeptide, polynucleotide or polypeptide-expressing APC may be $CD4^+$ and/or $CD8^+$. Lung tumor protein-specific T cells may be expanded using standard techniques. Within preferred embodiments, the T

cells are derived from a patient, a related donor or an unrelated donor, and are administered to the patient following stimulation and expansion.

For therapeutic purposes, $CD4^+$ or $CD8^+$ T cells that proliferate in response to a lung tumor polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be accomplished in a variety of ways. For example, the T cells can be re-exposed to a lung tumor polypeptide, or a short peptide corresponding to an immunogenic portion of such a polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize a lung tumor polypeptide. Alternatively, one or more T cells that proliferate in the presence of a lung tumor protein can be expanded in number by cloning. Methods for cloning cells are well known in the art, and include limiting dilution.

PHARMACEUTICAL COMPOSITIONS

In additional embodiments, the present invention concerns formulation of one or more of the polynucleotide, polypeptide, T-cell and/or antibody compositions disclosed herein in pharmaceutically-acceptable solutions for administration to a cell or an animal, either alone, or in combination with one or more other modalities of therapy.

It will also be understood that, if desired, the nucleic acid segment, RNA, DNA or PNA compositions that express a polypeptide as disclosed herein may be administered in combination with other agents as well, such as, *e.g.*, other proteins or polypeptides or various pharmaceutically-active agents. In fact, there is virtually no limit to other components that may also be included, given that the additional agents do not cause a significant adverse effect upon contact with the target cells or host tissues. The compositions may thus be delivered along with various other agents as required in the particular instance. Such compositions may be purified from host cells or other biological sources, or alternatively may be chemically synthesized as described herein. Likewise, such compositions may further comprise substituted or derivatized RNA or DNA compositions.

Formulation of pharmaceutically-acceptable excipients and carrier solutions is well-known to those of skill in the art, as is the development of suitable dosing and treatment regimens for using the particular compositions described herein in a variety of treatment regimens, including *e.g.,* oral, parenteral, intravenous, intranasal, and intramuscular administration and formulation.

1. ORAL DELIVERY

In certain applications, the pharmaceutical compositions disclosed herein may be delivered *via* oral administration to an animal. As such, these compositions may be formulated with an inert diluent or with an assimilable edible carrier, or they may be enclosed in hard- or soft-shell gelatin capsule, or they may be compressed into tablets, or they may be incorporated directly with the food of the diet.

The active compounds may even be incorporated with excipients and used in the form of ingestible tablets, buccal tables, troches, capsules, elixirs, suspensions, syrups, wafers, and the like (Mathiowitz *et al.*, 1997; Hwang *et al.*, 1998; U. S. Patent 5,641,515; U. S. Patent 5,580,579 and U. S. Patent 5,792,451, each specifically incorporated herein by reference in its entirety). The tablets, troches, pills, capsules and the like may also contain the following: a binder, as gum tragacanth, acacia, cornstarch, or gelatin; excipients, such as dicalcium phosphate; a disintegrating agent, such as corn starch, potato starch, alginic acid and the like; a lubricant, such as magnesium stearate; and a sweetening agent, such as sucrose, lactose or saccharin may be added or a flavoring agent, such as peppermint, oil of wintergreen, or cherry flavoring. When the dosage unit form is a capsule, it may contain, in addition to materials of the above type, a liquid carrier. Various other materials may be present as coatings or to otherwise modify the physical form of the dosage unit. For instance, tablets, pills, or capsules may be coated with shellac, sugar, or both. A syrup of elixir may contain the active compound sucrose as a sweetening agent methyl and propylparabens as preservatives, a dye and flavoring, such as cherry or orange flavor. Of course, any material used in preparing any dosage unit form should be pharmaceutically pure and substantially non-toxic in the amounts employed. In addition,

the active compounds may be incorporated into sustained-release preparation and formulations.

Typically, these formulations may contain at least about 0.1% of the active compound or more, although the percentage of the active ingredient(s) may, of course, be varied and may conveniently be between about 1 or 2% and about 60% or 70% or more of the weight or volume of the total formulation. Naturally, the amount of active compound(s) in each therapeutically useful composition may be prepared is such a way that a suitable dosage will be obtained in any given unit dose of the compound. Factors such as solubility, bioavailability, biological half-life, route of administration, product shelf life, as well as other pharmacological considerations will be contemplated by one skilled in the art of preparing such pharmaceutical formulations, and as such, a variety of dosages and treatment regimens may be desirable.

For oral administration the compositions of the present invention may alternatively be incorporated with one or more excipients in the form of a mouthwash, dentifrice, buccal tablet, oral spray, or sublingual orally-administered formulation. For example, a mouthwash may be prepared incorporating the active ingredient in the required amount in an appropriate solvent, such as a sodium borate solution (Dobell's Solution). Alternatively, the active ingredient may be incorporated into an oral solution such as one containing sodium borate, glycerin and potassium bicarbonate, or dispersed in a dentifrice, or added in a therapeutically-effective amount to a composition that may include water, binders, abrasives, flavoring agents, foaming agents, and humectants. Alternatively the compositions may be fashioned into a tablet or solution form that may be placed under the tongue or otherwise dissolved in the mouth.

2. INJECTABLE DELIVERY

In certain circumstances it will be desirable to deliver the pharmaceutical compositions disclosed herein parenterally, intravenously, intramuscularly, or even intraperitoneally as described in U. S. Patent 5,543,158; U. S. Patent 5,641,515 and U. S. Patent 5,399,363 (each specifically incorporated herein by reference in its entirety).

Solutions of the active compounds as free base or pharmacologically acceptable salts may be prepared in water suitably mixed with a surfactant, such as hydroxypropylcellulose. Dispersions may also be prepared in glycerol, liquid polyethylene glycols, and mixtures thereof and in oils. Under ordinary conditions of storage and use, these preparations contain a preservative to prevent the growth of microorganisms.

The pharmaceutical forms suitable for injectable use include sterile aqueous solutions or dispersions and sterile powders for the extemporaneous preparation of sterile injectable solutions or dispersions (U. S. Patent 5,466,468, specifically incorporated herein by reference in its entirety). In all cases the form must be sterile and must be fluid to the extent that easy syringability exists. It must be stable under the conditions of manufacture and storage and must be preserved against the contaminating action of microorganisms, such as bacteria and fungi. The carrier can be a solvent or dispersion medium containing, for example, water, ethanol, polyol (*e.g.*, glycerol, propylene glycol, and liquid polyethylene glycol, and the like), suitable mixtures thereof, and/or vegetable oils. Proper fluidity may be maintained, for example, by the use of a coating, such as lecithin, by the maintenance of the required particle size in the case of dispersion and by the use of surfactants. The prevention of the action of microorganisms can be facilitated by various antibacterial and antifungal agents, for example, parabens, chlorobutanol, phenol, sorbic acid, thimerosal, and the like. In many cases, it will be preferable to include isotonic agents, for example, sugars or sodium chloride. Prolonged absorption of the injectable compositions can be brought about by the use in the compositions of agents delaying absorption, for example, aluminum monostearate and gelatin.

For parenteral administration in an aqueous solution, for example, the solution should be suitably buffered if necessary and the liquid diluent first rendered isotonic with sufficient saline or glucose. These particular aqueous solutions are especially suitable for intravenous, intramuscular, subcutaneous and intraperitoneal administration. In this connection, a sterile aqueous medium that can be employed will be known to those of skill in the art in light of the present disclosure. For example, one dosage may be dissolved in 1 ml of isotonic NaCl solution and either added to 1000 ml of hypodermoclysis fluid or

injected at the proposed site of infusion, (see for example, "Remington's Pharmaceutical Sciences" 15th Edition, pages 1035-1038 and 1570-1580). Some variation in dosage will necessarily occur depending on the condition of the subject being treated. The person responsible for administration will, in any event, determine the appropriate dose for the individual subject. Moreover, for human administration, preparations should meet sterility, pyrogenicity, and the general safety and purity standards as required by FDA Office of Biologics standards.

Sterile injectable solutions are prepared by incorporating the active compounds in the required amount in the appropriate solvent with various of the other ingredients enumerated above, as required, followed by filtered sterilization. Generally, dispersions are prepared by incorporating the various sterilized active ingredients into a sterile vehicle which contains the basic dispersion medium and the required other ingredients from those enumerated above. In the case of sterile powders for the preparation of sterile injectable solutions, the preferred methods of preparation are vacuum-drying and freeze-drying techniques which yield a powder of the active ingredient plus any additional desired ingredient from a previously sterile-filtered solution thereof.

The compositions disclosed herein may be formulated in a neutral or salt form. Pharmaceutically-acceptable salts, include the acid addition salts (formed with the free amino groups of the protein) and which are formed with inorganic acids such as, for example, hydrochloric or phosphoric acids, or such organic acids as acetic, oxalic, tartaric, mandelic, and the like. Salts formed with the free carboxyl groups can also be derived from inorganic bases such as, for example, sodium, potassium, ammonium, calcium, or ferric hydroxides, and such organic bases as isopropylamine, trimethylamine, histidine, procaine and the like. Upon formulation, solutions will be administered in a manner compatible with the dosage formulation and in such amount as is therapeutically effective. The formulations are easily administered in a variety of dosage forms such as injectable solutions, drug-release capsules, and the like.

As used herein, "carrier" includes any and all solvents, dispersion media, vehicles, coatings, diluents, antibacterial and antifungal agents, isotonic and absorption

delaying agents, buffers, carrier solutions, suspensions, colloids, and the like. The use of such media and agents for pharmaceutical active substances is well known in the art. Except insofar as any conventional media or agent is incompatible with the active ingredient, its use in the therapeutic compositions is contemplated. Supplementary active ingredients can also be incorporated into the compositions.

The phrase "pharmaceutically-acceptable" refers to molecular entities and compositions that do not produce an allergic or similar untoward reaction when administered to a human. The preparation of an aqueous composition that contains a protein as an active ingredient is well understood in the art. Typically, such compositions are prepared as injectables, either as liquid solutions or suspensions; solid forms suitable for solution in, or suspension in, liquid prior to injection can also be prepared. The preparation can also be emulsified.

3. NASAL DELIVERY

In certain embodiments, the pharmaceutical compositions may be delivered by intranasal sprays, inhalation, and/or other aerosol delivery vehicles. Methods for delivering genes, nucleic acids, and peptide compositions directly to the lungs *via* nasal aerosol sprays has been described *e.g.,* in U. S. Patent 5,756,353 and U. S. Patent 5,804,212 (each specifically incorporated herein by reference in its entirety). Likewise, the delivery of drugs using intranasal microparticle resins (Takenaga *et al.*, 1998) and lysophosphatidyl-glycerol compounds (U. S. Patent 5,725,871, specifically incorporated herein by reference in its entirety) are also well-known in the pharmaceutical arts. Likewise, transmucosal drug delivery in the form of a polytetrafluoroetheylene support matrix is described in U. S. Patent 5,780,045 (specifically incorporated herein by reference in its entirety).

4. LIPOSOME-, NANOCAPSULE-, AND MICROPARTICLE-MEDIATED DELIVERY

In certain embodiments, the inventors contemplate the use of liposomes, nanocapsules, microparticles, microspheres, lipid particles, vesicles, and the like, for the introduction of the compositions of the present invention into suitable host cells. In

particular, the compositions of the present invention may be formulated for delivery either encapsulated in a lipid particle, a liposome, a vesicle, a nanosphere, or a nanoparticle or the like.

Such formulations may be preferred for the introduction of pharmaceutically-acceptable formulations of the nucleic acids or constructs disclosed herein. The formation and use of liposomes is generally known to those of skill in the art (see for example, Couvreur *et al.*, 1977; Couvreur, 1988; Lasic, 1998; which describes the use of liposomes and nanocapsules in the targeted antibiotic therapy for intracellular bacterial infections and diseases). Recently, liposomes were developed with improved serum stability and circulation half-times (Gabizon and Papahadjopoulos, 1988; Allen and Choun, 1987; U. S. Patent 5,741,516, specifically incorporated herein by reference in its entirety). Further, various methods of liposome and liposome like preparations as potential drug carriers have been reviewed (Takakura, 1998; Chandran *et al.*, 1997; Margalit, 1995; U. S. Patent 5,567,434; U. S. Patent 5,552,157; U. S. Patent 5,565,213; U. S. Patent 5,738,868 and U. S. Patent 5,795,587, each specifically incorporated herein by reference in its entirety).

Liposomes have been used successfully with a number of cell types that are normally resistant to transfection by other procedures including T cell suspensions, primary hepatocyte cultures and PC 12 cells (Renneisen *et al.*, 1990; Muller *et al.*, 1990). In addition, liposomes are free of the DNA length constraints that are typical of viral-based delivery systems. Liposomes have been used effectively to introduce genes, drugs (Heath and Martin, 1986; Heath *et al.*, 1986; Balazsovits *et al.*, 1989; Fresta and Puglisi, 1996), radiotherapeutic agents (Pikul *et al.*, 1987), enzymes (Imaizumi *et al.*, 1990a; Imaizumi *et al.*, 1990b), viruses (Faller and Baltimore, 1984), transcription factors and allosteric effectors (Nicolau and Gersonde, 1979) into a variety of cultured cell lines and animals. In addition, several successful clinical trails examining the effectiveness of liposome-mediated drug delivery have been completed (Lopez-Berestein *et al.*, 1985a; 1985b; Coune, 1988; Sculier *et al.*, 1988). Furthermore, several studies suggest that the use of

liposomes is not associated with autoimmune responses, toxicity or gonadal localization after systemic delivery (Mori and Fukatsu, 1992).

Liposomes are formed from phospholipids that are dispersed in an aqueous medium and spontaneously form multilamellar concentric bilayer vesicles (also termed multilamellar vesicles (MLVs). MLVs generally have diameters of from 25 nm to 4 μm. Sonication of MLVs results in the formation of small unilamellar vesicles (SUVs) with diameters in the range of 200 to 500 Å, containing an aqueous solution in the core.

Liposomes bear resemblance to cellular membranes and are contemplated for use in connection with the present invention as carriers for the peptide compositions. They are widely suitable as both water- and lipid-soluble substances can be entrapped, *i.e.* in the aqueous spaces and within the bilayer itself, respectively. It is possible that the drug-bearing liposomes may even be employed for site-specific delivery of active agents by selectively modifying the liposomal formulation.

In addition to the teachings of Couvreur *et al.* (1977; 1988), the following information may be utilized in generating liposomal formulations. Phospholipids can form a variety of structures other than liposomes when dispersed in water, depending on the molar ratio of lipid to water. At low ratios the liposome is the preferred structure. The physical characteristics of liposomes depend on pH, ionic strength and the presence of divalent cations. Liposomes can show low permeability to ionic and polar substances, but at elevated temperatures undergo a phase transition which markedly alters their permeability. The phase transition involves a change from a closely packed, ordered structure, known as the gel state, to a loosely packed, less-ordered structure, known as the fluid state. This occurs at a characteristic phase-transition temperature and results in an increase in permeability to ions, sugars and drugs.

In addition to temperature, exposure to proteins can alter the permeability of liposomes. Certain soluble proteins, such as cytochrome c, bind, deform and penetrate the bilayer, thereby causing changes in permeability. Cholesterol inhibits this penetration of proteins, apparently by packing the phospholipids more tightly. It is contemplated that the

most useful liposome formations for antibiotic and inhibitor delivery will contain cholesterol.

The ability to trap solutes varies between different types of liposomes. For example, MLVs are moderately efficient at trapping solutes, but SUVs are extremely inefficient. SUVs offer the advantage of homogeneity and reproducibility in size distribution, however, and a compromise between size and trapping efficiency is offered by large unilamellar vesicles (LUVs). These are prepared by ether evaporation and are three to four times more efficient at solute entrapment than MLVs.

In addition to liposome characteristics, an important determinant in entrapping compounds is the physicochemical properties of the compound itself. Polar compounds are trapped in the aqueous spaces and nonpolar compounds bind to the lipid bilayer of the vesicle. Polar compounds are released through permeation or when the bilayer is broken, but nonpolar compounds remain affiliated with the bilayer unless it is disrupted by temperature or exposure to lipoproteins. Both types show maximum efflux rates at the phase transition temperature.

Liposomes interact with cells *via* four different mechanisms: endocytosis by phagocytic cells of the reticuloendothelial system such as macrophages and neutrophils; adsorption to the cell surface, either by nonspecific weak hydrophobic or electrostatic forces, or by specific interactions with cell-surface components; fusion with the plasma cell membrane by insertion of the lipid bilayer of the liposome into the plasma membrane, with simultaneous release of liposomal contents into the cytoplasm; and by transfer of liposomal lipids to cellular or subcellular membranes, or vice versa, without any association of the liposome contents. It often is difficult to determine which mechanism is operative and more than one may operate at the same time.

The fate and disposition of intravenously injected liposomes depend on their physical properties, such as size, fluidity, and surface charge. They may persist in tissues for h or days, depending on their composition, and half lives in the blood range from min to several h. Larger liposomes, such as MLVs and LUVs, are taken up rapidly by phagocytic cells of the reticuloendothelial system, but physiology of the circulatory system restrains

the exit of such large species at most sites. They can exit only in places where large openings or pores exist in the capillary endothelium, such as the sinusoids of the liver or spleen. Thus, these organs are the predominate site of uptake. On the other hand, SUVs show a broader tissue distribution but still are sequestered highly in the liver and spleen. In general, this *in vivo* behavior limits the potential targeting of liposomes to only those organs and tissues accessible to their large size. These include the blood, liver, spleen, bone marrow, and lymphoid organs.

Targeting is generally not a limitation in terms of the present invention. However, should specific targeting be desired, methods are available for this to be accomplished. Antibodies may be used to bind to the liposome surface and to direct the antibody and its drug contents to specific antigenic receptors located on a particular cell-type surface. Carbohydrate determinants (glycoprotein or glycolipid cell-surface components that play a role in cell-cell recognition, interaction and adhesion) may also be used as recognition sites as they have potential in directing liposomes to particular cell types. Mostly, it is contemplated that intravenous injection of liposomal preparations would be used, but other routes of administration are also conceivable.

Alternatively, the invention provides for pharmaceutically-acceptable nanocapsule formulations of the compositions of the present invention. Nanocapsules can generally entrap compounds in a stable and reproducible way (Henry-Michelland *et al.*, 1987; Quintanar-Guerrero *et al.*, 1998; Douglas *et al.*, 1987). To avoid side effects due to intracellular polymeric overloading, such ultrafine particles (sized around 0.1 μm) should be designed using polymers able to be degraded *in vivo*. Biodegradable polyalkyl-cyanoacrylate nanoparticles that meet these requirements are contemplated for use in the present invention. Such particles may be are easily made, as described (Couvreur *et al.*, 1980; 1988; zur Muhlen *et al.*, 1998; Zambaux *et al.* 1998; Pinto-Alphandry *et al.*, 1995 and U. S. Patent 5,145,684, specifically incorporated herein by reference in its entirety).

IMMUNOGENIC COMPOSITIONS

In certain preferred embodiments of the present invention, immunogenic compositions, or vaccines, are provided. The immunogenic compositions will generally comprise one or more pharmaceutical compositions, such as those discussed above, in combination with an immunostimulant. An immunostimulant may be any substance that enhances or potentiates an immune response (antibody and/or cell-mediated) to an exogenous antigen. Examples of immunostimulants include adjuvants, biodegradable microspheres (*e.g.,* polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.,* Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and immunogenic compositions, or vaccines, within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound, within the composition.

Illustrative immunogenic compositions may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ.* As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Numerous gene delivery techniques are well known in the art, such as those described by Rolland, *Crit. Rev. Therap. Drug Carrier Systems 15*:143-198, 1998, and references cited therein. Appropriate nucleic acid expression systems contain the necessary DNA sequences for expression in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface or secretes such an epitope. In a preferred embodiment, the DNA may be introduced using a viral expression system (*e.g.,* vaccinia or other pox virus, retrovirus, or adenovirus), which may involve the use of a non-

pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch *et al.*, *Proc. Natl. Acad. Sci. USA 86*:317-321, 1989; Flexner *et al.*, *Ann. N.Y. Acad. Sci. 569*:86-103, 1989; Flexner *et al.*, *Vaccine 8*:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651; EP 0,345,242; WO 91/02805; Berkner, *Biotechniques 6*:616-627, 1988; Rosenfeld *et al.*, *Science 252*:431-434, 1991; Kolls *et al.*, *Proc. Natl. Acad. Sci. USA 91*:215-219, 1994; Kass-Eisler *et al.*, *Proc. Natl. Acad. Sci. USA 90*:11498-11502, 1993; Guzman *et al.*, *Circulation 88*:2838-2848, 1993; and Guzman *et al.*, *Cir. Res. 73*:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer *et al.*, *Science 259*:1745-1749, 1993 and reviewed by Cohen, *Science 259*:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells. It will be apparent that an immunogenic composition may comprise both a polynucleotide and a polypeptide component. Such immunogenic compositions may provide for an enhanced immune response.

It will be apparent that an immunogenic composition may contain pharmaceutically acceptable salts of the polynucleotides and polypeptides provided herein. Such salts may be prepared from pharmaceutically acceptable non-toxic bases, including organic bases (*e.g.,* salts of primary, secondary and tertiary amines and basic amino acids) and inorganic bases (*e.g.,* sodium, potassium, lithium, ammonium, calcium and magnesium salts).

While any suitable carrier known to those of ordinary skill in the art may be employed in the immunogenic compositions of this invention, the type of carrier will vary depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. For oral

administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (*e.g.,* polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres are disclosed, for example, in U.S. Patent Nos. 4,897,268; 5,075,109; 5,928,647; 5,811,128; 5,820,883; 5,853,763; 5,814,344 and 5,942,252. One may also employ a carrier comprising the particulate-protein complexes described in U.S. Patent No. 5,928,647, which are capable of inducing a class I-restricted cytotoxic T lymphocyte responses in a host.

Such compositions may also comprise buffers (*e.g.,* neutral buffered saline or phosphate buffered saline), carbohydrates (*e.g.,* glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, bacteriostats, chelating agents such as EDTA or glutathione, adjuvants (*e.g.,* aluminum hydroxide), solutes that render the formulation isotonic, hypotonic or weakly hypertonic with the blood of a recipient, suspending agents, thickening agents and/or preservatives. Alternatively, compositions of the present invention may be formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of immunostimulants may be employed in the immunogenic compositions of this invention. For example, an adjuvant may be included. Most adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune responses, such as lipid A, *Bortadella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI); Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ); AS-2 (SmithKline Beecham, Philadelphia, PA); aluminum salts such as aluminum hydroxide gel (alum) or aluminum phosphate; salts of calcium, iron or zinc; an insoluble suspension of acylated tyrosine; acylated sugars; cationically or anionically derivatized polysaccharides; polyphosphazenes; biodegradable microspheres;

monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the immunogenic compositions provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (*e.g.,* IFN-γ, TNFα, IL-2 and IL-12) tend to favor the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (*e.g.,* IL-4, IL-5, IL-6 and IL-10) tend to favor the induction of humoral immune responses. Following application of an immunogenic composition as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol. 7*:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt. MPL adjuvants are available from Corixa Corporation (Seattle, WA; *see* US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555, WO 99/33488 and U.S. Patent Nos. 6,008,200 and 5,856,462. Immunostimulatory DNA sequences are also described, for example, by Sato *et al., Science 273*:352, 1996. Another preferred adjuvant is a saponin, preferably QS21 (Aquila Biopharmaceuticals Inc., Framingham, MA), which may be used alone or in combination with other adjuvants. For example, an enhanced system involves the combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is quenched with cholesterol, as described in WO 96/33739. Other preferred formulations comprise an oil-in-water

emulsion and tocopherol. A particularly potent adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210.

Other preferred adjuvants include Montanide ISA 720 (Seppic, France), SAF (Chiron, California, United States), ISCOMS (CSL), MF-59 (Chiron), the SBAS series of adjuvants (*e.g.,* SBAS-2 or SBAS-4, available from SmithKline Beecham, Rixensart, Belgium), Detox (Corixa, Hamilton, MT), RC-529 (Corixa, Hamilton, MT) and other aminoalkyl glucosaminide 4-phosphates (AGPs), such as those described in pending U.S. Patent Application Serial Nos. 08/853,826 and 09/074,720, the disclosures of which are incorporated herein by reference in their entireties.

Any immunogenic composition provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient. The compositions described herein may be administered as part of a sustained release formulation (*i.e.,* a formulation such as a capsule, sponge or gel (composed of polysaccharides, for example) that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology (*see, e.g.,* Coombes *et al., Vaccine 14*:1429-1438, 1996) and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix and/or contained within a reservoir surrounded by a rate controlling membrane.

Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of active component release. Such carriers include microparticles of poly(lactide-co-glycolide), polyacrylate, latex, starch, cellulose, dextran and the like. Other delayed-release carriers include supramolecular biovectors, which comprise a non-liquid hydrophilic core (*e.g.,* a cross-linked polysaccharide or oligosaccharide) and, optionally, an external layer comprising an amphiphilic compound, such as a phospholipid (*see e.g.,* U.S. Patent No. 5,151,254 and PCT applications WO 94/20078, WO/94/23701 and WO 96/06638). The amount of active compound contained within a sustained release formulation depends upon

the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within pharmaceutical compositions and immunogenic compositions to facilitate production of an antigen-specific immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the antigen, to improve activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.,* matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

Certain preferred embodiments of the present invention use dendritic cells or progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent APCs (Banchereau and Steinman, *Nature 392*:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (*see* Timmerman and Levy, *Ann. Rev. Med. 50*:507-529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*, with marked cytoplasmic processes (dendrites) visible *in vitro*), their ability to take up, process and present antigens with high efficiency and their ability to activate naïve T cell responses. Dendritic cells may, of course, be engineered to express specific cell-surface receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used within a vaccine, or immunogenic composition (*see* Zitvogel *et al.*, *Nature Med. 4*:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph nodes, spleen,

skin, umbilical cord blood or any other suitable tissue or fluid. For example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNFα to cultures of monocytes harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNFα, CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce differentiation, maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized phenotypes. However, this nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fcγ receptor and mannose receptor. The mature phenotype is typically characterized by a lower expression of these markers, but a high expression of cell surface molecules responsible for T cell activation such as class I and class II MHC, adhesion molecules (*e.g.*, CD54 and CD11) and costimulatory molecules (*e.g.*, CD40, CD80, CD86 and 4-1BB).

APCs may generally be transfected with a polynucleotide encoding a lung tumor protein (or portion or other variant thereof) such that the lung tumor polypeptide, or an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex vivo*, and a composition comprising such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi *et al.*, *Immunology and cell Biology 75*:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells with the lung tumor polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant

bacterium or viruses (*e.g.,* vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that provides T cell help (*e.g.,* a carrier molecule). Alternatively, a dendritic cell may be pulsed with a non-conjugated immunological partner, separately or in the presence of the polypeptide.

Immunogenic compositions and pharmaceutical compositions may be presented in unit-dose or multi-dose containers, such as sealed ampoules or vials. Such containers are preferably hermetically sealed to preserve sterility of the formulation until use. In general, formulations may be stored as suspensions, solutions or emulsions in oily or aqueous vehicles. Alternatively, an immunogenic or pharmaceutical composition may be stored in a freeze-dried condition requiring only the addition of a sterile liquid carrier immediately prior to use.

CANCER THERAPY

In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as lung cancer. Within such methods, compositions are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and immunogenic compositions may be used to prevent the development of a cancer or to treat a patient afflicted with a cancer. A cancer may be diagnosed using criteria generally accepted in the art, including the presence of a malignant tumor. Pharmaceutical compositions and immunogenic compositions may be administered either prior to or following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs. Administration may be by any suitable method, including administration by intravenous, intraperitoneal, intramuscular, subcutaneous, intranasal, intradermal, anal, vaginal, topical and oral routes.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host

immune system to react against tumors with the administration of immune response-modifying agents (such as polypeptides and polynucleotides as provided herein).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not necessarily depend on an intact host immune system. Examples of effector cells include T cells as discussed above, T lymphocytes (such as $CD8^+$ cytotoxic T lymphocytes and $CD4^+$ T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The polypeptides provided herein may also be used to generate antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic, macrophage, monocyte, fibroblast and/or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example, antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*.

Studies have shown that cultured effector cells can be induced to grow in vivo and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see*, for example, Cheever *et al.*, *Immunological Reviews 157*:177, 1997).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into antigen presenting cells taken from a patient and clonally propagated *ex vivo* for transplant back into the same patient. Transfected cells may be reintroduced into the patient using any means known in the art, preferably in sterile form by intravenous, intracavitary, intraperitoneal or intratumor administration.

Routes and frequency of administration of the therapeutic compositions described herein, as well as dosage, will vary from individual to individual, and may be readily established using standard techniques. In general, the pharmaceutical compositions and immunogenic compositions may be administered by injection (*e.g.*, intracutaneous, intramuscular, intravenous or subcutaneous), intranasally (*e.g.*, by aspiration) or orally. Preferably, between 1 and 10 doses may be administered over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines, or immunogenic compositions, should also be capable of causing an immune response that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-vaccinated patients. In general, for compositions comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 25 μg to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such a response can be monitored by establishing an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to a lung tumor protein generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

CANCER DETECTION AND DIAGNOSIS

In general, a cancer may be detected in a patient based on the presence of one or more lung tumor proteins and/or polynucleotides encoding such proteins in a biological sample (for example, blood, sera, sputum urine and/or tumor biopsies) obtained from the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as lung cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of antigen that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA encoding a tumor protein, which is also indicative of the presence or absence of a cancer. In general, a lung tumor sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. *See*, *e.g.*, Harlow and Lane, *Antibodies: A Laboratory Manual,* Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b) detecting in the sample a level of polypeptide that binds to the agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G, protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized binding agent. Suitable polypeptides for use within such assays include full length lung tumor proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the tumor protein may be attached. For example, the solid support may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking agent). Immobilization by adsorption to a well in a microtiter plate or to a membrane is preferred. In such cases, adsorption may be achieved by contacting the binding agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1

hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of binding agent ranging from about 10 ng to about 10 μg, and preferably about 100 ng to about 1 μg, is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.*, Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20™ (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the presence of polypeptide within a sample obtained from an individual with lung cancer. Preferably, the contact time is

sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve equilibrium may be readily determined by assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide. An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of time. Unbound detection reagent is then removed and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

To determine the presence or absence of a cancer, such as lung cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered positive for the cancer. In an alternate preferred embodiment, the cut-off value is determined using a Receiver Operator Curve,

according to the method of Sackett *et al.*, *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent. Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of

antibody immobilized on the membrane ranges from about 25 ng to about 1μg, and more preferably from about 50 ng to about 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the tumor proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use lung tumor polypeptides to detect antibodies that bind to such polypeptides in a biological sample. The detection of such lung tumor protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with a lung tumor protein in a biological sample. Within certain methods, a biological sample comprising $CD4^+$ and/or $CD8^+$ T cells isolated from a patient is incubated with a lung tumor polypeptide, a polynucleotide encoding such a polypeptide and/or an APC that expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with polypeptide (*e.g.*, 5 - 25 μg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of lung tumor polypeptide to serve as a control. For $CD4^+$ T cells, activation is preferably detected by evaluating proliferation of the T cells. For $CD8^+$ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding a lung tumor protein in a biological sample. For example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based

assay to amplify a portion of a lung tumor cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.,* hybridizes to) a polynucleotide encoding the lung tumor protein. The amplified cDNA is then separated and detected using techniques well known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding a lung tumor protein may be used in a hybridization assay to detect the presence of polynucleotide encoding the tumor protein in a biological sample.

To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%, preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding a lung tumor protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in length. Preferably, oligonucleotide primers and/or probes hybridize to a polynucleotide encoding a polypeptide described herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers comprise at least 10 contiguous nucleotides, more preferably at least 15 contiguous nucleotides, of a DNA molecule having a sequence recited in SEQ ID NO: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 or 1676. Techniques for both PCR based assays and hybridization assays are well known in the art (*see*, for example, Mullis *et al., Cold Spring Harbor Symp. Quant. Biol., 51*:263, 1987; Erlich ed., *PCR Technology*, Stockton Press, NY, 1989).

One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological

sample, such as biopsy tissue, and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification may be performed on biological samples taken from a test patient and from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered positive.

In another embodiment, the compositions described herein may be used as markers for the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) or polynucleotide(s) evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide or polynucleotide detected increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide or polynucleotide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple lung tumor protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of tumor protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for tumor proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds, reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to a lung tumor protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively, contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding a lung tumor protein in a biological sample. Such kits generally comprise at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding a lung tumor protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay. Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding a lung tumor protein.

The following Examples are offered by way of illustration and not by way of limitation.

EXAMPLE 1

IDENTIFICATION AND CHARACTERIZATION OF LUNG TUMOR PROTEIN cDNAS

This Example illustrates the identification of cDNA molecules encoding lung tumor proteins.

A. Isolation of cDNA Sequences from Lung Adenocarcinoma Libraries using Conventional cDNA Library Subtraction

A human lung adenocarcinoma cDNA expression library was constructed from poly A^+ RNA from patient tissues (# 40031486) using a Superscript Plasmid System for cDNA Synthesis and Plasmid Cloning kit (BRL Life Technologies, Gaithersburg, MD) following the manufacturer's protocol. Specifically, lung carcinoma tissues were homogenized with polytron (Kinematica, Switzerland) and total RNA was extracted using Trizol reagent (BRL Life Technologies) as directed by the manufacturer. The poly A^+ RNA was then purified using an oligo dT cellulose column as described in Sambrook et al., *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, 1989. First-strand cDNA was synthesized using the NotI/Oligo-dT18 primer. Double-stranded cDNA was synthesized, ligated with BstXI/EcoRI adaptors (Invitrogen, San Diego, CA) and digested with NotI. Following size fractionation with cDNA size fractionation columns (BRL Life Technologies), the cDNA was ligated into the BstXI/NotI site of pcDNA3.1 (Invitrogen) and transformed into ElectroMax *E. coli* DH10B cells (BRL Life Technologies) by electroporation. A total of 3×10^6 independent colonies were generated.

Using the same procedure, a normal human cDNA expression library was prepared from a panel of normal tissue specimens, including lung, liver, pancreas, skin, kidney, brain and resting PBMC.

cDNA library subtraction was performed using the above lung adenocarcinoma and normal tissue cDNA libraries, as described by Hara *et al.* (*Blood*,

84:189-199, 1994) with some modifications. Specifically, a lung adenocarcinoma-specific subtracted cDNA library was generated as follows. The normal tissue cDNA library (80 μg) was digested with BamHI and XhoI, followed by a filling-in reaction with DNA polymerase Klenow fragment. After phenol-chloroform extraction and ethanol precipitation, the DNA was dissolved in 133 μl of H_2O, heat-denatured and mixed with 133 μl (133 μg) of Photoprobe biotin (Vector Laboratories, Burlingame, CA). As recommended by the manufacturer, the resulting mixture was irradiated with a 270 W sunlamp on ice for 20 minutes. Additional Photoprobe biotin (67 μl) was added and the biotinylation reaction was repeated. After extraction with butanol five times, the DNA was ethanol-precipitated and dissolved in 23 μl H_2O. The resulting DNA, plus other highly redundant cDNA clones that were frequently recovered in previous lung subtractions formed the driver DNA.

To form the tracer DNA, 10 μg lung adenocarcinoma cDNA library was digested with NotI and SpeI, phenol chloroform extracted and passed through Chroma spin-400 columns (Clontech, Palo Alto, CA). Typically, 5 μg of cDNA was recovered after the sizing column. Following ethanol precipitation, the tracer DNA was dissolved in 5 μl H_2O. Tracer DNA was mixed with 15 μl driver DNA and 20 μl of 2 x hybridization buffer (1.5 M NaCl/10 mM EDTA/50 mM HEPES pH 7.5/0.2% sodium dodecyl sulfate), overlaid with mineral oil, and heat-denatured completely. The sample was immediately transferred into a 68 ^{0}C water bath and incubated for 20 hours (long hybridization [LH]). The reaction mixture was then subjected to a streptavidin treatment followed by phenol/chloroform extraction. This process was repeated three more times. Subtracted DNA was precipitated, dissolved in 12 μl H_2O, mixed with 8 μl driver DNA and 20 μl of 2 x hybridization buffer, and subjected to a hybridization at 68°C for 2 hours (short hybridization [SH]). After removal of biotinylated double-stranded DNA, subtracted cDNA was ligated into NotI/SpeI site of chloramphenicol resistant pBCSK$^+$ (Stratagene, La Jolla, CA) and transformed into ElectroMax *E. coli* DH10B cells by electroporation to generate a lung adenocarcinoma specific subtracted cDNA library, referred to as LAT-S1

Similarly, LAT-S2 was generated by including 23 genes that were over-expressed in the tracer as additional drivers.

A second human lung adenocarcinoma cDNA expression library was constructed using adenocarcinoma tissue from a second patient (# 86-66) and used to prepare a second lung adenocarcinoma-specific subtracted cDNA library (referred to as LAT2-S2), as described above, using the same panel of normal tissues and the additional genes over-expressed in LAT-S1.

A third human metastatic lung adenocarcinoma library was constructed from a pool of two lung pleural effusions with lung and gastric adenocarcinoma origins. The subtracted cDNA library, Mets-sub2 was generated as described above using the same panel of normal tissues. However, the Mets-sub3 subtracted library was constructed by including 51 additional genes as drivers. These 51 genes were recovered in Mets-sub2, representing over-expressed housekeeping genes in the testers. As a result, Mets-sub3 is more complexed and normalized.

A total of 16 cDNA fragments isolated from LAT-S1, 585 cDNA fragments isolated from LAT-S2, 568 cDNA clones from LAT2-S2, 15 cDNA clones from Mets-sub2 and 343 cDNA clones from Mets-sub3, described above, were colony PCR amplified and their mRNA expression levels in lung tumor, normal lung, and various other normal and tumor tissues were determined using microarray technology (Incyte, Palo Alto, CA). Briefly, the PCR amplification products were dotted onto slides in an array format, with each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, reverse transcribed, and fluorescent-labeled cDNA probes were generated. The microarrays were probed with the labeled cDNA probes, the slides scanned and fluorescence intensity was measured. This intensity correlates with the hybridization intensity. Seventy-three non-redundant cDNA clones, of which 42 were found to be unique, showed over-expression in lung tumors, with expression in normal tissues tested (lung, skin, lymph node, colon, liver, pancreas, breast, heart, bone marrow, large intestine, kidney, stomach, brain, small intestine, bladder and salivary gland) being either undetectable, or at significantly lower levels compared to lung adenocarcinoma tumors.

These clones were further characterized by DNA sequencing with a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A and/or Model 377 (Foster City, CA).

The sequences were compared to known sequences in the gene bank using the EMBL GenBank databases (release 96). No significant homologies were found to the sequence provided in SEQ ID NO: 67, with no apparent homology to previously identified expressed sequence tags (ESTs). The sequences of SEQ ID NO: 60, 62, 65, 66, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97 and 98 were found to show some homology to previously identified expressed sequence tags (ESTs). The cDNA sequences of SEQ ID NO: 59, 61, 63, 64, 67, 68, 72, 73, 75, 77, 78, 81-83, 85, 87, 88, 93, 94, 96, 99 and 100 showed homology to previously identified genes. The full-length cDNA sequences for the clones of SEQ ID NO: 96 and 100 are provided in SEQ ID NO: 316 and 318, respectively. The amino acid sequences for the clones of SEQ ID NO: 59, 61, 63, 64, 68, 73, 82, 83, 94, 96 and 100 are provided in SEQ ID NO: 331, 328, 329, 332, 327, 333, 330, 326, 325, 324 and 335, respectively. A predicted amino acid sequence encoded by the sequence of SEQ ID NO: 69 (referred to as L552S) is provided in SEQ ID NO: 786.

Further studies led to the isolation of an extended cDNA sequence, and open reading frame, for L552S (SEQ ID NO: 790). The predicted amino acid sequence encoded by the cDNA sequence of SEQ ID NO: 790 is provided in SEQ ID NO: 791. The determined cDNA sequence of an isoform of L552S is provided in SEQ ID NO: 792, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 793. Subsequent studies led to the isolation of the full-length cDNA sequence of L552S (SEQ ID NO: 808). The corresponding amino acid sequence is provided in SEQ ID NO: 809. No homologies were found to the protein sequence of L552S. However, nucleotides 533-769 of the full-length cDNA sequence were found to show homology to a previously identified DNA sequence.

Full-length cloning efforts on L552S led to the isolation of three additional cDNA sequences (SEQ ID NO: 810-812) from a metastatic lung adenocarcinoma library. The sequence of SEQ ID NO: 810 was found to show some homology to previously

identified human DNA sequences. The sequence of SEQ ID NO: 811 was found to show some homology to a previously identified DNA sequence. The sequence of SEQ ID NO: 812 was found to show some homology to previously identified ESTs.

The gene of SEQ ID NO: 84 (referred to as L551S) was determined by real-time RT-PCR analysis to be over-expressed in 2/9 primary adenocarcinomas and to be expressed at lower levels in 2/2 metastatic adenocarcinomas and 1/2 squamous cell carcinomas. No expression was observed in normal tissues, with the exception of very low expression in normal stomach. Further studies on L551S led to the isolation of the 5' and 3' cDNA consensus sequences provided in SEQ ID NO: 801 and 802, respectively. The L551S 5' sequence was found to show some homology to the previously identified gene STY8 (cDNA sequence provided in SEQ ID NO: 803; corresponding amino acid sequence provided in SEQ ID NO: 805), which is a mitogen activated protein kinase phosphatase. However, no significant homologies were found to the 3' sequence of L551S. Subsequently, an extended cDNA sequence for L551S was isolated (SEQ ID NO: 804). The corresponding amino acid sequence is provided in SEQ ID NO: 806. Further studies led to the isolation of two independent full-length clones for L551S (referred to as 54298 and 54305). These two clones have five nucleotide differences compared to the STY8 DNA sequence. Two of these differences are single nucleotide polymorphisms which do not effect the encoded amino acid sequences. The other three nucleotide differences are consistent between the two L551S clones but lead to encoded amino acid sequences that are different from the STY8 protein sequence. The determined cDNA sequences for the L551S full-length clones 54305 and 54298 are provided in SEQ ID NO: 825 and 826, respectively, with the amino acid sequence for L551S being provided in SEQ ID NO: 827.

B. Isolation of cDNA Sequences from Lung Adenocarcinoma Libraries using PCR-Based cDNA Library Subtraction

cDNA clones from a PCR-based subtraction library, containing cDNA from a pool of two human lung primary adenocarcinomas subtracted against a pool of nine normal human tissue cDNAs including skin, colon, lung, esophagus, brain, kidney, spleen,

pancreas and liver, (Clontech, Palo Alto, CA) were derived and submitted to a first round of PCR amplification. This library (referred to as ALT-1) was subjected to a second round of PCR amplification, following the manufacturer's protocol. The expression levels of 760 cDNA clones in lung tumor, normal lung, and various other normal and tumor tissues, were examined using microarray technology as described above. A total of 118 clones, of which 55 were unique, were found to be over-expressed in lung tumor tissue, with expression in normal tissues tested (lung, skin, lymph node, colon, liver, pancreas, breast, heart, bone marrow, large intestine, kidney, stomach, brain, small intestine, bladder and salivary gland) being either undetectable, or at significantly lower levels. The sequences were compared to known sequences in the gene bank using the EMBL and GenBank databases (release 96). No significant homologies (including ESTs) were found to the sequence provided in SEQ ID NO: 44. The sequences of SEQ ID NO: 1, 11, 13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43, 45, 46, 51 and 57 were found to show some homology to previously identified expressed sequence tags (ESTs). The cDNA sequences of SEQ ID NO: 2-10, 12, 14, 16-19, 21, 22, 28, 31, 32, 35-38, 40, 42, 44, 47-50, 52-56 and 58 showed homology to previously identified genes. The full-length cDNA sequences for the clones of SEQ ID NO: 18, 22, 31, 35, 36 and 42 are provided in SEQ ID NO: 320, 319, 323, 321, 317, 321 and 322, respectively, with the corresponding amino acid sequences being provided in SEQ ID NO: 337, 336, 340, 338, 334, and 339, respectively.

Further studies led to the isolation of an extended cDNA sequence for the clone of SEQ ID NO: 33 (referred to as L801P). This extended cDNA sequence (provided in SEQ ID NO: 796), was found to contain three potential open reading frames (ORFs). The predicted amino acid sequences encoded by these three ORFs are provided in SEQ ID NO: 797-799, respectively. Additional full-length cloning efforts led to still further extended cDNA sequence for L801P, set forth in SEQ ID NO:1669, in addition to five potential open reading frames (ORFs 4-9; SEQ ID NOs: 1670-1675, respectively) encoded by the extended cDNA sequence. Moreover, L801P was mapped to chromosomal region 20p13 and a 137 amino acid ORF from this genomic region was identified that corresponds to ORF4 (SEQ ID NO: 1670), suggesting that this is likely an authentic ORF for L801P.

By microarray analysis, L801P was overexpressed by 2-fold or greater in the lung tumor probe groups compared to the normal tissue probe group (not shown). By real-time PCR analysis, greater than 50% of lung adenocarcinoma and greater than 30% of lung squamous cell carcinoma tumor samples tested had elevated L801P expression relative to normal lung tissue. Of those that displayed elevated L801P, the level of expression was greater than 10-fold higher than in normal lung tissue samples. Moreover, low or no expression of L801P was detected in an extensive panel of normal tissue RNAs.

We have also found that L801P expression is detected in a number of other tumor types, including breast, prostate, ovarian and colon tumors, and thus may have diagnostic and/or therapeutic utility in these cancer types as well.

In subsequent studies, a full-length cDNA sequence for the clone of SEQ ID NO: 44 (referred to as L844P) was isolated (provided in SEQ ID NO: 800). Comparison of this sequence with those in the public databases revealed that the 470 bases at the 5' end of the sequence show homology to the known gene dihydrodiol dehydrogenase, thus indicating that L844P is a novel transcript of the dihydrodiol dehydrogenase family having 2007 base pairs of previously unidentified 3' untranslated region.

The predicted amino acid sequence encoded by the sequence of SEQ ID NO: 46 (referred to as L840P) is provided in SEQ ID NO: 787. An extended cDNA sequence for L840P, which was determined to include an open reading frame, is provided in SEQ ID NO: 794. The predicted amino acid sequence encoded by the cDNA sequence of SEQ ID NO: 794 is provided in SEQ ID NO: 795. The full-length cDNA sequence for the clone of SEQ ID NO: 54 (referred to as L548S) is provided in SEQ ID NO: 788, with the corresponding amino acid sequence being provided in SEQ ID NO: 789.

Northern blot analyses of the genes of SEQ ID NO: 25 and 46 (referred to as L839P and L840P, respectively) were remarkably similar. Both genes were expressed in 1/2 lung adenocarcinomas as two bands of 3.6 kb and 1.6 kb. No expression of L839P was observed in normal lung or trachea. No expression of L840P was observed in normal bone marrow, resting or activated PBMC, esophagus, or normal lung. Given the similar expression patterns, L839P and L840P may be derived from the same gene.

Further studies on L773P (SEQ ID NO: 58) resulted in the isolation of the extended consensus cDNA sequence provided in SEQ ID NO: 807.

Additional lung adenocarcinoma cDNA clones were isolated as follows. A cDNA library was prepared from a pool of two lung adenocarcinomas and subtracted against cDNA from a panel of normal tissues including lung, brain, liver, kidney, pancreas, skin, heart and spleen. The subtraction was performed using a PCR-based protocol (Clontech), which was modified to generate larger fragments. Within this protocol, tester and driver double stranded cDNA were separately digested with five restriction enzymes that recognize six-nucleotide restriction sites (MluI, MscI, PvuII, SalI and StuI). This digestion resulted in an average cDNA size of 600 bp, rather than the average size of 300 bp that results from digestion with RsaI according to the Clontech protocol. The ends of the restriction digested tester cDNA were filled in to generate blunt ends for adapter ligation. This modification did not affect the subtraction efficiency. Two tester populations were then created with different adapters, and the driver library remained without adapters. The tester and driver libraries were then hybridized using excess driver cDNA. In the first hybridization step, driver was separately hybridized with each of the two tester cDNA populations. This resulted in populations of (a) unhybridized tester cDNAs, (b) tester cDNAs hybridized to other tester cDNAs, (c) tester cDNAs hybridized to driver cDNAs and (d) unhybridized driver cDNAs. The two separate hybridization reactions were then combined, and rehybridized in the presence of additional denatured driver cDNA. Following this second hybridization, in addition to populations (a) through (d), a fifth population (e) was generated in which tester cDNA with one adapter hybridized to tester cDNA with the second adapter. Accordingly, the second hybridization step resulted in enrichment of differentially expressed sequences which could be used as templates for PCR amplification with adaptor-specific primers.

The ends were then filled in, and PCR amplification was performed using adaptor-specific primers. Only population (e), which contained tester cDNA that did not hybridize to driver cDNA, was amplified exponentially. A second PCR amplification step

was then performed, to reduce background and further enrich differentially expressed sequences.

Fifty-seven cDNA clones were isolated from the subtracted library (referred to as LAP1) and sequenced. The determined cDNA sequences for 16 of these clones are provided in SEQ ID NO: 101-116. The sequences of SEQ ID NO: 101 and 114 showed no significant homologies to previously identified sequences. The sequences of SEQ ID NO: 102-109 and 112 showed some similarity to previously identified sequences, while the sequences of SEQ ID NO: 113, 115 and 116 showed some similarity to previously isolated ESTs.

An additional 502 clones analyzed from the LAP1 library were sequenced and the determined cDNA sequences are shown in SEQ ID NO:828-1239 and 1564-1653.

C. Isolation of cDNA Sequences from Small Cell Lung Carcinoma Libraries using PCR-Based cDNA Library Subtraction

A subtracted cDNA library for small cell lung carcinoma (referred to as SCL1) was prepared using essentially the modified PCR-based subtraction process described above. cDNA from small cell lung carcinoma was subtracted against cDNA from a panel of normal tissues, including normal lung, brain, kidney, liver, pancreas, skin, heart, lymph node and spleen. Both tester and driver poly A+ RNA were initially amplified using SMART PCR cDNA synthesis kit (Clontech, Palo Alto, CA). The tester and driver double stranded cDNA were separately digested with five restriction enzymes (DraI, MscI, PvuII, SmaI, and StuI). These restriction enzymes generated blunt end cuts and the digestion resulted in an average insert size of 600 bp. Digestion with this set of restriction enzymes eliminates the step required to generate blunt ends by filling in of the cDNA ends. These modifications did not affect subtraction efficiency.

Eighty-five clones were isolated and sequenced. The determined cDNA sequences for 31 of these clones are provided in SEQ ID NO: 117-147. The sequences of SEQ ID NO: 122, 124, 126, 127, 130, 131, 133, 136, 139 and 147 showed no significant homologies to previously identified sequences. The sequences of SEQ ID NO: 120, 129,

135, 137, 140, 142, 144 and 145 showed some similarity to previously identified gene sequences, while the sequences of SEQ ID NO: 114, 118, 119, 121, 123, 125, 128, 132, 134, 138, 141, 143 and 147 showed some similarity to previously isolated ESTs.

In further studies, three additional cDNA libraries were generated from poly A+ RNA from a single small cell lung carcinoma sample subtracted against a pool of poly A+ RNA from nine normal tissues (lung, brain, kidney, liver, pancreas, skin, heart pituitary gland and spleen). For the first library (referred to as SCL2), the subtraction was carried out essentially as described above for the LAP1 library, with the exception that the tester and driver were digested with PvuII, StuI, MscI and DraI. The ratio of tester and driver cDNA used was as recommended by Clontech. For the second library (referred to as SCL3), subtraction was performed essentially as for SCL2 except that cDNA for highly redundant clones identified from the SCL2 library was included in the driver cDNA. Construction of the SCL4 library was performed essentially as described for the SCL3 library except that a higher ratio of driver to tester was employed.

Each library was characterized by DNA sequencing and database analyses. The determined cDNA sequence for 35 clones isolated from the SCL2 library are provided in SEQ ID NO: 245-279, with the determined cDNA sequences for 21 clones isolated from the SCL3 library and for 15 clones isolated from the SCL4 library being provided in SEQ ID NO: 280-300 and 301-315, respectively. The sequences of SEQ ID NO: 246, 254, 261, 262, 304, 309 and 311 showed no significant homologies to previously identified sequences. The sequence of SEQ ID NO: 245, 248, 255, 266, 270, 275, 280, 282, 283, 288-290, 292, 295, 301 and 303 showed some homology to previously isolated ESTs, while the sequences of SEQ ID NO: 247, 249-253, 256-260, 263-265, 267-269, 271-274, 276-279, 281, 284-287, 291, 293, 294, 296-300, 302, 305-308, 310 and 312-315 showed some homology to previously identified gene sequences.

3264 cDNA clones from three PCR-based subtracted cDNA libraries were analyzed by cDNA microarray technology as part of Lung Chip 5. Of the 3264 cDNA clones 960 clones came from SQL1 library, 768 clones came from SCL1 library, and 1536 clones came from SCL3 and SCL4 libraries. 35 pairs of fluorescent labeled cDNA probes

were used for the microarray analysis. Each probe pair included a lung tumor probe paired with a normal tissue probe. The expression data was analyzed. 498 cDNA clones were found to be overexpressed by 2-fold or greater in the small cell and/or non-small cell lung tumor probe groups compared to the normal tissue probe group. Also, the mean expression values for these clones in normal tissues were below 0.1 (range of expression is from 0.001 to 10). The cDNA sequences disclosed in SEQ ID NO:1240-1563 represent 324 non-redundant clones.

The following sequences were novel based on database analysis including GenBank and GeneSeq: SEQ ID NO:1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, and 1563.

Full-length sequence for contig 139 (SEQ ID NO: 1467), also known as L985P, was identified by searching public databases using SEQ ID NO: 1467 as a query. By this approach, L985 was identified as cell surface immunomodulator-2 (CSIMM-2), the cDNA sequence of which is set forth in SEQ ID NO: 1676, encoding a protein having the sequence set forth in SEQ ID NO: 1677.

By microarray analysis, L985P was overexpressed by 2-fold or greater in the lung tumor probe groups compared to the normal tissue probe group. Moreover, the mean expression values for L985P in normal tissues was below 0.2 (range of expression was from 0.01 to 10). By real-time PCR analysis, greater than 40% of small cell lung carcinoma lung tumor samples tested had elevated L985P expression relative to normal lung tissue. Of those that displayed elevated L985P, the level of expression was greater than 3-fold higher than in normal lung tissue samples. Low or no expression of L985P was detected in an extensive panel of normal tissue RNAs. These findings for L985P support its use both as a diagnositic marker for detecting the presence of lung cancer in a patient and/or as a immunotherapeutic target for the treatment of lung cancer.

D. Isolation of cDNA Sequences from a Neuroendocrine Library using PCR-Based cDNA Library Subtraction

Using the modified PCR-based subtraction process, essentially as described above for the LAP1 subtracted library, a subtracted cDNA library (referred to as MLN1) was derived from a lung neuroendocrine carcinoma that had metastasized to the subcarinal lymph node, by subtraction with a panel of nine normal tissues, including normal lung, brain, kidney, liver, pancreas, skin, heart, lymph node and spleen.

Ninety-one individual clones were isolated and sequenced. The determined cDNA sequences for 58 of these clones are provided in SEQ ID NO: 147-222. The sequences of SEQ ID NO: 150, 151, 154, 157, 158, 159, 160, 163, 174, 175, 178, 186-190, 192, 193, 195-200, 208-210, 212-215 and 220 showed no significant homologies to previously identified sequences. The sequences of SEQ ID NO: 152, 155, 156, 161, 165, 166, 176, 179, 182, 184, 185, 191, 194, 221 and 222 showed some similarity to previously identified gene sequences, while the sequences of SEQ ID NO: 148, 149, 153, 164, 167-173, 177, 180, 181, 183, 201-207, 211 and 216-219 showed some similarity to previously isolated ESTs.

The determined cDNA sequences of an additional 442 clones isolated from the MLN1 library are provided in SEQ ID NO: 341-782. The determined cDNA sequences of an additional 11 clones isolated from the MLN1 library are provided in SEQ ID NO:1654-1664.

E. Isolation of cDNA Sequences from a Squamous Cell Lung Carcinoma Library using PCR-Based cDNA Library Subtraction

A subtracted cDNA library for squamous cell lung carcinoma (referred to as SQL1) was prepared, essentially using the modified PCR-based subtraction process described above, except the tester and driver double stranded cDNA were separately digested with four restriction enzymes (DraI, MscI, PvuII and StuI) cDNA from a pool of two squamous cell lung carcinomas was subtracted against cDNA from a pool of 10 normal

tissues, including normal lung, brain, kidney, liver, pancreas, skin, heart, spleen, esophagus and trachea.

Seventy-four clones were isolated and sequenced. The determined cDNA sequences for 22 of these clones are provided in SEQ ID NO: 223-244. The sequence of SEQ ID NO: 241 showed no significant homologies to previously identified sequences. The sequences of SEQ ID NO: 223, 225, 232, 233, 235, 238, 239, 242 and 243 showed some similarity to previously identified gene sequences, while the sequences of SEQ ID NO: 224, 226-231, 234, 236, 237, 240, 241 and 244 showed some similarity to previously isolated ESTs.

The sequences of an additional 12 clones isolated during characterization of cDNA libraries prepared from lung tumor tissue are provided in SEQ ID NO: 813-824. Comparison of these sequences with those in the GenBank database and the GeneSeq DNA database revealed no significant homologies to previously identified sequences.

EXAMPLE 2

SYNTHESIS OF POLYPEPTIDES

Polypeptides may be synthesized on a Perkin Elmer/Applied Biosystems Division 430A peptide synthesizer using FMOC chemistry with HPTU (O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate) activation. A Gly-Cys-Gly sequence may be attached to the amino terminus of the peptide to provide a method of conjugation, binding to an immobilized surface, or labeling of the peptide. Cleavage of the peptides from the solid support may be carried out using the following cleavage mixture: trifluoroacetic acid:ethanedithiol:thioanisole:water :phenol (40:1:2:2:3). After cleaving for 2 hours, the peptides may be precipitated in cold methyl-t-butyl-ether. The peptide pellets may then be dissolved in water containing 0.1% trifluoroacetic acid (TFA) and lyophilized prior to purification by C18 reverse phase HPLC. A gradient of 0%-60% acetonitrile (containing 0.1% TFA) in water (containing 0.1% TFA) may be used to elute the peptides.

Following lyophilization of the pure fractions, the peptides may be characterized using electrospray or other types of mass spectrometry and by amino acid analysis.

EXAMPLE 3

PREPARATION OF ANTIBODIES AGAINST LUNG CANCER ANTIGENS

Polyclonal antibodies against the lung cancer antigen L773P (SEQ ID NO: 783) were prepared as follows.

Rabbits were immunized with recombinant protein expressed in and purified from *E. coli* as described above. For the initial immunization, 400 µg of antigen combined with muramyl dipeptide (MDP) was injected subcutaneously (S.C.). Animals were boosted S.C. 4 weeks later with 200 µg of antigen mixed with incomplete Freund's Adjuvant (IFA). Subsequent boosts of 100 µg of antigen mixed with IFA were injected S.C. as necessary to induce high antibody titer responses. Serum bleeds from immunized rabbits were tested for L773P-specific reactivity using ELISA assays with purified protein and showed strong reactivity to L733P. Polyclonal antibodies against L773P were affinity purified from high titer polyclonal sera using purified protein attached to a solid support.

EXAMPLE 4

PROTEIN EXPRESSION OF LUNG TUMOR-SPECIFIC ANTIGENS

Full-length L773P (amino acids 2-364 of SEQ ID NO: 783), with a 6X His Tag, were subcloned into the pPDM expression vector and transformed into either BL21 CodonPlus or BL21 pLysS host cells using standard techniques. High levels of expression were observed in both cases. Similarly, the N-terminal portion of L773P (amino acids 2-71 of SEQ ID NO: 783; referred to as L773PA), with a 6X His tag were subcloned into the vector pPDM and transformed into BL21 CodonPlus host cells. Low levels of expression were observed by N-terminal sequencing. The sequence of the expressed constructs for L773P and L773PA are provided in SEQ ID NO: 784 and 785, respectively.

EXAMPLE 5

EXPRESSION IN E. COLI OF L548S HIS TAG FUSION PROTEIN

The L548S coding region was PCR amplified with the following primers:

Forward primer starting at amino acid 2:

PDM-433: 5' gctaaaggtgaccccaagaaaccaaag 3' Tm 60°C (SEQ ID NO:1665)

Reverse primer creating a XhoI site after the stop codon:

PDM-438: 5' ctattaactcgagggagacagataaacagtttcttta 3' Tm 61°C (SEQ ID NO:1666)

The PCR product was then digested with XhoI restriction enzyme, gel purified and then cloned into pPDM His, a modified pET28 vector with a His tag in frame, which had been digested with Eco72I and XhoI restriction enzymes. The correct construct was confirmed by DNA sequence analysis and then transformed into BL21 (DE3) pLys S and BL21 (DE3) CodonPlus RIL expression hosts.

The protein sequence of expressed recombinant L548S is shown in SEQ ID NO:1667, and the DNA sequence of expressed recombinant L7548S is shown in SEQ ID NO:1668.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims.

CLAIMS

What is claimed:

1. An isolated polypeptide, comprising at least an immunogenic portion of a lung tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800, 802, 804, 807, 808, 811-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563 and 1669;

(b) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800, 802, 804, 807, 808, 811-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563 and 1669 under moderately stringent conditions; and

(c) complements of sequences of (a) or (b).

2. An isolated polypeptide according to claim 1, wherein the polypeptide comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800, 802, 804, 807, 808, 811-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563, and 1669 or a complement of any of the foregoing polynucleotide sequences.

3. An isolated polypeptide comprising a sequence recited in any one of SEQ ID NOs: 786, 787, 791, 793, 795, 797-799, 806, 809, 827 and 1670-1675.

4. An isolated polynucleotide encoding at least 15 amino acid residues of a lung tumor protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NO: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785,

790, 792, 794, 796, 800, 802, 804, 807, 808, 811-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563 and 1669 or a complement of any of the foregoing sequences.

5. An isolated polynucleotide encoding a lung tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800, 802, 804, 807, 808, 811-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563 and 1669 or a complement of any of the foregoing sequences.

6. An isolated polynucleotide, comprising a sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800, 802, 804, 807, 808, 811-826, 1240, 1243, 1247, 1269, 1272, 1280,

1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563 and 1669.

7. An isolated polynucleotide, comprising a sequence that hybridizes to a sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800, 802, 804, 807, 808, 811-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563 and 1669 under moderately stringent conditions.

8. An isolated polynucleotide complementary to a polynucleotide according to any one of claims 4-7.

9. An expression vector, comprising a polynucleotide according to any one of claims 4-8.

10. A host cell transformed or transfected with an expression vector according to claim 9.

11. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a lung tumor protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800, 802, 804, 807, 808, 811-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563 and 1669 or a complement of any of the foregoing polynucleotide sequences.

12. A fusion protein, comprising at least one polypeptide according to claim 1.

13. A fusion protein according to claim 12, wherein the fusion protein comprises an expression enhancer that increases expression of the fusion protein in a host cell transfected with a polynucleotide encoding the fusion protein.

14. A fusion protein according to claim 12, wherein the fusion protein comprises a T helper epitope that is not present within the polypeptide of claim 1.

15. A fusion protein according to claim 12, wherein the fusion protein comprises an affinity tag.

16. An isolated polynucleotide encoding a fusion protein according to claim 12.

17. A pharmaceutical composition, comprising a physiologically acceptable carrier and at least one component selected from the group consisting of:

(a) a polypeptide according to claim 1;

(b) a polynucleotide according to claim 4;

(c) an antibody according to claim 11;

(d) a fusion protein according to claim 12; and

(e) a polynucleotide according to claim 16.

18. An immunogenic composition comprising an immunostimulant and at least one component selected from the group consisting of:

(a) a polypeptide according to claim 1;

(b) a polynucleotide according to claim 4;

(c) an antibody according to claim 11;

(d) a fusion protein according to claim 12; and

(e) a polynucleotide according to claim 16.

19. An immunogenic composition according to claim 18, wherein the immunostimulant is an adjuvant.

20. An immunogenic composition according to any claim 18, wherein the immunostimulant induces a predominantly Type I response.

21. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 17.

22. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an immunogenic composition according to claim 18.

23. A pharmaceutical composition comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a pharmaceutically acceptable carrier or excipient.

24. A pharmaceutical composition according to claim 23, wherein the antigen presenting cell is a dendritic cell or a macrophage.

25. An immunogenic composition comprising an antigen-presenting cell that expresses a polypeptide comprising at least an immunogenic portion of a lung tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826 and 828-1664, 1669 and 1676;

(b) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 and 1676 under moderately stringent conditions; and

(c) complements of sequences of (i) or (ii);

in combination with an immunostimulant.

26. An immunogenic composition according to claim 25, wherein the immunostimulant is an adjuvant.

27. An immunogenic composition according to claim 25, wherein the immunostimulant induces a predominantly Type I response.

28. An immunogenic composition according to claim 25, wherein the antigen-presenting cell is a dendritic cell.

29. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antigen-presenting cell that expresses a polypeptide comprising at least an immunogenic portion of a lung tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826 828-1664, 1669 and 1676;

(b) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826 828-1664, 1669 and 1676 under moderately stringent conditions; and

(c) complements of sequences of (i) or (ii) encoded by a polynucleotide recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826 828-1664, 1669 and 1676;

and thereby inhibiting the development of a cancer in the patient.

30. A method according to claim 29, wherein the antigen-presenting cell is a dendritic cell.

31. A method according to any one of claims 21, 22 and 29, wherein the cancer is lung cancer.

32. A method for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a lung tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826 828-1664, 1669 and 1676 ; and

(ii) complements of the foregoing polynucleotides;

wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the antigen from the sample.

33. A method according to claim 32, wherein the biological sample is blood or a fraction thereof.

34. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated according to the method of claim 32.

35. A method for stimulating and/or expanding T cells specific for a lung tumor protein, comprising contacting T cells with at least one component selected from the group consisting of:

(a) polypeptides comprising at least an immunogenic portion of a lung tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) sequences recited in SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826 828-1664, 1669 and 1676;

(ii) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785,

790, 792, 794, 796, 800-804, 807, 808, 810-826 828-1664, 1669 and 1676 under moderately stringent conditions; and

(iii) complements of sequences of (i) or (ii);

(b) polynucleotides encoding a polypeptide of (a); and

(c) antigen presenting cells that express a polypeptide of (a);

under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

36. An isolated T cell population, comprising T cells prepared according to the method of claim 35.

37. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population according to claim 36.

38. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating $CD4^+$ and/or CD8+ T cells isolated from a patient with at least one component selected from the group consisting of:

(i) polypeptides comprising at least an immunogenic portion of a lung tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(1) sequences recited in SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 and 1676;

(2) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 and 1676 under moderately stringent conditions; and

(3) complements of sequences of (1) or (2);

(ii) polynucleotides encoding a polypeptide of (i); and

(iii) antigen presenting cells that expresses a polypeptide of (i);

such that T cells proliferate; and

(b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

39. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating $CD4^{+}$ and/or CD8+ T cells isolated from a patient with at least one component selected from the group consisting of:

(i) polypeptides comprising at least an immunogenic portion of a lung tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(1) sequences recited in SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 and 1676;

(2) sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 and 1676 under moderately stringent conditions; and

(3) complements of sequences of (1) or (2);

(ii) polynucleotides encoding a polypeptide of (i); and

(iii) antigen presenting cells that express a polypeptide of (i);

such that T cells proliferate;

(b) cloning at least one proliferated cell to provide cloned T cells; and

(c) administering to the patient an effective amount of the cloned T cells, and thereby inhibiting the development of a cancer in the patient.

40. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with a binding agent that binds to a lung tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 and 1676 or a complement of any of the foregoing polynucleotide sequences;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent; and

(c) comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

41. A method according to claim 40, wherein the binding agent is an antibody.

42. A method according to claim 43, wherein the antibody is a monoclonal antibody.

43. A method according to claim 40, wherein the cancer is lung cancer.

44. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a lung tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 and 1676 or a complement of any of the foregoing polynucleotide sequences;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polypeptide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

45. A method according to claim 44, wherein the binding agent is an antibody.

46. A method according to claim 45, wherein the antibody is a monoclonal antibody.

47. A method according to claim 44, wherein the cancer is a lung cancer.

48. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a lung tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NO: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 and 1676 or a complement of any of the foregoing polynucleotide sequences;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(c) comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

49. A method according to claim 48, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

50. A method according to claim 48, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

51. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a lung tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NO: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800-804, 807, 808, 810-826, 828-1664, 1669 and 1676 or a complement of any of the foregoing polynucleotide sequences;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

52. A method according to claim 51, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

53. A method according to claim 51, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

54. A diagnostic kit, comprising:

(a) one or more antibodies according to claim 11; and

(b) a detection reagent comprising a reporter group.

55. A kit according to claim 54, wherein the antibodies are immobilized on a solid support.

56. A kit according to claim 54, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.

57. A kit according to claim 54, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent groups, enzymes, biotin and dye particles.

58. An oligonucleotide comprising 10 to 40 contiguous nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes a lung tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800, 802, 804, 807, 808, 811-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475,

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59. A oligonucleotide according to claim 58, wherein the oligonucleotide comprises 10-40 contiguous nucleotides recited in any one of SEQ ID NO: 1, 11-13, 15, 20, 23-27, 29, 30, 33, 34, 39, 41, 43-46, 51, 52, 57, 58, 60, 62, 65-67, 69-71, 74, 76, 79, 80, 84, 86, 89-92, 95, 97, 98, 101, 110, 111, 113-119, 121-128, 130-134, 136, 138, 139, 141, 143, 146-151, 153, 154, 157-160, 162-164, 167-178, 180, 181, 183, 186-190, 192, 193, 195-220, 224, 226-231, 234, 236, 237, 240, 241, 244-246, 248, 254, 255, 261, 262, 266, 270, 275, 280, 282, 283, 288, 289, 290, 292, 295, 301, 303, 304, 309, 311, 341-782, 784, 785, 790, 792, 794, 796, 800, 802, 804, 807, 808, 811-826, 1240, 1243, 1247, 1269, 1272, 1280, 1283, 1285, 1286, 1289, 1300, 1309, 1318, 1319, 1327, 1335, 1339, 1346, 1359, 1369, 1370, 1371, 1393, 1398, 1405, 1408, 1413, 1414, 1417, 1422, 1429, 1432, 1435, 1436, 1438-1442, 1447, 1450, 1453, 1463, 1467, 1470, 1473, 1475, 1482, 1486, 1491-1494, 1501, 1505, 1506, 1514-1517, 1520, 1522, 1524, 1535, 1538, 1542, 1543, 1547, 1554, 1557, 1559, 1561, 1563, 1669 and 1676.

60. A diagnostic kit, comprising:

(a) an oligonucleotide according to claim 59; and

(b) a diagnostic reagent for use in a polymerase chain reaction or hybridization assay.

COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF LUNG CANCER

ABSTRACT OF THE DISCLOSURE

Compositions and methods for the therapy and diagnosis of cancer, such as lung cancer, are disclosed. Compositions may comprise one or more lung tumor proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a lung tumor protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as lung cancer. Diagnostic methods based on detecting a lung tumor protein, or mRNA encoding such a protein, in a sample are also provided.

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Tongtong Wang et al.
Filed	:	August 29, 2000
For	:	COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF LUNG CANCER

Docket No.	:	210121.478C10
Date	:	August 29, 2000

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

DECLARATION

Sir:

I, Monica Steinborn, in accordance with 37 C.F.R. § 1.821(f) do hereby declare that, to the best of my knowledge, the content of the paper entitled "Sequence Listing" and the computer readable copy contained within the floppy disk are the same.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated this 29th day of August, 2000.

Monica Steinborn

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aactacaaga cggtagagtc tttggaagaa accttgaaga aagcgtctcc tgatggttat 180
gattgttatt ttgataatgt aggtggagag ttttcaaaca ctgttatcgg ccagatgaag 240
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cccccaggcc cacccccaga gattgttatc tatcaggagc ttcgcatgga agcttttgtc 360
gtctaccgct ggcaaggaga tgcccgccaa aaagctctga aggacttgct gaaatgggtc 420
ttagagttta aatttcagct tccctacttt gtaattgact gact 464

<210> 4
<211> 510
<212> DNA
<213> Homo sapien

<400> 4
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gaggtgggct gggagattaa catcttacct ggggtccttc agataaacct gttggttttt 180
cctgtctcat acaggcccat cttaagtttt gatgttgaat taaaactact tctacccccct 240
tagttataaa aaaggccaca aggagcattt atgtggatat ctggaagtga gatagttatt 300
ccattcccag gaaaagaaaa ataaagctaa gttacaaaac taaatctata tgcaataaag 360
ttattatata ctgctttgtt taagcagagt cctctggaat ttatgtacag tacattagtt 420
ttcagctatt tatattccac aagttagacc ttaagattct ctggttttaa gacaattgtt 480
aaagatactt ctaaagctct gagcagttca 510

<210> 5
<211> 452
<212> DNA
<213> Homo sapien

<400> 5
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agtggtagat ttagaagaag agaaccaaaa acttttgcta gaaaatcagc ttttacgaga 180
gaaaactcat ggccttgtag ttgagaacca ggagttaaga cagcgcttgg ggatggatgc 240
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tgtgagtact ggttccaagt gacatgaccc agcgattatg tttacagtct ggacttctga 360
tcaagagcgt tcttgaaatt ttccttcagt tttaagacat tttcatgcag gcagagtgtt 420
cttcccctaa aggcacttga cactcatttt tt 452

<210> 6
<211> 336
<212> DNA
<213> Homo sapien

<400> 6
tatagagtgc tgacatctga cattgagaaa ttcatgccta ttgtttatac tcccactgtg 60

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atccacgatc gagggcatat tgcttcagtt ctcaatgcat ggccagaaga tgtcatcaag     180
gccattgtgg tgactgatgg agagcgtatt cttggcttgg gagaccttgg ctgtaatgga     240
atgggcatcc ctgtgggtaa attggctcta tatacagctt gcggagggat gaatcctcaa     300
gaatgtctgc ctgtcattct ggatgtggga accgaa                               336
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<210> 7
<211> 376
<212> DNA
<213> Homo sapien

<400> 7

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aggagttagc caaacaacaa caaaaacaaa aaatgtgctg ttcaagtttt cagctttaag     120
atatctttgg ataatgttat ttctattttt tatttttttt cattagaagt taccaaatta     180
agatggtaag acctctgaga ccaaaatttt gtcccatctc tacccccctca caactgctta    240
cagaatggat catgtccccc ttatgttgag gtgaccactt aattgctttc ctgcctcctt     300
gaaagaaaga aagaaagaag actgtgtttt tgccactgat ttagccatgt gaaactcatc     360
tcattaccct tttctg                                                     376
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<210> 8
<211> 406
<212> DNA
<213> Homo sapien

<400> 8

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ggtagggagc aattctatta tttggcattg catggctggg ttgaattaaa acagggagtg      60
agaacaggtg agtctagaag tccaactctg aaaaggacca ctgtacattt gaacacacgg     120
ctgtgttaaa gatgctgcta atgtcagtca ctgggtgcac taaaggatct cttattttat     180
gtaaaacgtt gggattgaca agatagatct gatactctgt taagttaccc tctgaagcta     240
cttcttgtga aatactaatg acagcatcat cctgccaagc gaaagaggca ggcataagca     300
aggacaaatt aaaagggggt aagagcctta tcatgatgag gagtcttgtt ttgacatctt     360
gggaaaagct gtccatagtg tgaagtcgtc aatttctcac catggt                    406
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<210> 9
<211> 330
<212> DNA
<213> Homo sapien

<400> 9

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actactacca agagctgcag agagacattt ctgaaatgtt tttgcagatt tataaacaag      60
ggggttttct gggcctctcc aatattaagt tcaggccagg atctgtggtg gtacaattga     120
ctctggcctt ccgagaaggt accatcaatg tccacgacgt ggagacacag ttcaatcagt     180
ataaaacgga agcagcctct cgatataacc tgacgatctc agacgtcagc gtgagtgatg     240
tgccatttcc tttctctgcc cagtctgggg ctggggtgcc aggctggggc atcgcgctgc     300
tggtgctggt ctgtgttctg gttgcgctgg                                      330
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<210> 10
<211> 449
<212> DNA
<213> Homo sapien

<400> 10

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ctgacggctt tgctgtccca gagccgccta aacgcaagaa aagtcgatgg gacagttaga      60
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ggggatgtgc taaagcgtga aatcagttgt ccttaatttt tagaaagatt ttggtaacta     120
ggtgtctcag ggctgggttg gggtccaaag tgtaaggacc ccctgccctt agtggagagc     180
tggagcttgg agacattacc ccttcatcag aaggaatttt cggatgtttt cttgggaagc     240
tgttttggtc cttggaagca gtgagagctg ggaagcttct tttggctcta ggtgagttgt     300
catgcgggta agttgaggtt atcttgggat aaagggtctt ctagggcaca aaactcactc     360
taggtttata ttgtatgtag cttatatttt ttactaaggt gtcaccttat aagcatctat     420
aaattgagtt ctttttctta gttgtatgg                                       449

      <210> 11
      <211> 472
      <212> DNA
      <213> Homo sapien

      <400> 11
cctcgatgca tgctgctcta cctctcatca gcccacagtc tgacacgagg tcatctttgg      60
tctgtggtga ggtatggatg tctgcagtct acacaacagc cctgcagaac gggcctggac     120
aacccttggg ggataagaca gccacacatg gctcaggctg ttaggtgtcc actgtcacag     180
tccaaagaga aaggtacggc ctccaagggg gcagcttaag ccaacatgta agacttgggc     240
acgatgaaag gacgggggtc cagctacgaa tgtttttgtt cttgatgtca agttgccagc     300
tactggaagg caggagcagt ttcttctttt tcccactctg tgctgggtac ttgggagagg     360
cgaaataaat accagactgt ccactcctca gcctaaggtc cttctcaagt cctgcacact     420
cagcacttgc tctttaacgt ggcatatgtt cccccatctt cccctggtaa tg             472

      <210> 12
      <211> 371
      <212> DNA
      <213> Homo sapien

      <400> 12
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actgccagcc tagggatgca cttgattccc aagaaatgca actgtcctat tcgcaragcc     120
gtccacaggt acctaccccc tggactgcag caactttatt accttaacta gcacaraaca     180
gaggttgatt taaactcctt acactcactt ctcaratcaa tgaatgggca aaraaacmcc     240
tcatggctct gggaaggcat gctgaraccc gtttttgcaa gtcctgagga atggaaraat     300
atagctgcca ggtatcccaa gtctagggca gggagggkag tatcggcatc actttcactg     360
cattctgttg g                                                          371

      <210> 13
      <211> 493
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(493)
      <223> n = A,T,C or G

      <400> 13
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ctycaattgc caatttggtg gcctctaaag ctttactttt aggaacctct gcaggcgcat     120
aggtgccaaa tcccaggaca ggcatgaagt gaccatcatt cagcttcaca cactgatatt     180
tcgaatccat ttctgtcnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnc     240
caacctgctc ctcattattg taaacatgtg cagaatcaat atggcggaac ccagcttcta     300
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agcaatcccg ccgagcttct ttgagacgtc ctcaggtgtc ctttgacgat gcgtcctcca 420
ctttcacaca ctctagcatt ccttcactgg ggtcttcatt gccccacatt gggcagccag 480
gaatgttggg gtg 493

<210> 14
<211> 540
<212> DNA
<213> Homo sapien

<400> 14
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gtcttgtact ccagggtgga agtcatggta tagagctgag tcactgggtc catttccttt 120
ttaaaattat gaccaccgct ccttcaaggg gatgtagcac ttttccattc ctgtaccatg 180
tgatattgcc atctggataa ctgtcttctg aaatgcagtc acccaacttt tttagctgct 240
ctgtttcgag aaacagtgct ttgcttacaa tttcaggttt agatggttgc ttgaacacct 300
tgactattgt aggtgcctca aacacgttgt cctcagttac tagcatgcac acaaatctct 360
tttcatcact gatccttgca ttactgatag acaaagtgta gttttctgag aggttcaatc 420
tgtctttgta ttctggtaca tcgtcgtact gcacactttt ctttgtagag gatctgaagg 480
caataaatac tggggagcca tcgggctttt catatttcca tttgcccaaa catgagattc 540

<210> 15
<211> 421
<212> DNA
<213> Homo sapien

<400> 15
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tagcagtcaa gtgtcttccc caatcctaat gtcccctgat atgtctctag cgacttgacc 120
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agatagcccc aaaggctcta tctttagctc ccagagaact tttggtcct cagtatttcc 240
cttccccttt ccttcctatt ccccacaact gggggaggga agggagaaca ggggcacctg 300
atcatcaatc tcccctgccc ctctcttgaa gccccctaga tttggatgaa gagcaggcca 360
gtgagcaggg caaagcctgc taggagcaga atgaccttga ggatcctttg ctcagaactg 420
g 421

<210> 16
<211> 236
<212> DNA
<213> Homo sapien

<400> 16
gccgtgtgtg cttttcccag tgccgaggta cctatcgctc acggccagga gcttgtcgtg 60
gctgacagca aagagctgct ctctgtgggc ctgcttcatc tcatccgaga ggccgtacaa 120
gaagtggtcc attcctttgt ctgaaggagc gacaggagca tctacggttg agaagacaga 180
aagtttggct tcgtcgatgt cttgctgtgt gaattttcca gacttagccc agtcga 236

<210> 17
<211> 424
<212> DNA
<213> Homo sapien

<400> 17
ccagaaaggt gacagtggtt ttccagggcc tcctgggcct ccaggtccac ctggtgaagt 60
cattcagcct ttaccaatct tgtcctccaa aaaaacgaga agacatactg aaggcatgca 120

agcagatgca gatgataata ttcttgatta ctcggatgga atggaagaaa tatttggttc 180
cctcaattcc ctgaaacaag acatcgagca tatgaaattt ccaatgggta ctcagaccaa 240
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ttggattgat cctaaccaag gttgctcagg agattccttc aaagtttact gtaatttcac 360
atctggtggt gagacttgca tttatccaga caaaaaatct gagggagtaa gaatttcatc 420
atgg 424

<210> 18
<211> 154
<212> DNA
<213> Homo sapien

<400> 18
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aggacaattg aaatttgcta aagggaaagg ggaaagaaag ggaaaaggga gaaaaagaaa 120
cacaagagac ttaaaggaca ggaggaggag atgg 154

<210> 19
<211> 445
<212> DNA
<213> Homo sapien

<400> 19
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aattaaagtt gaacaaattg aagcagggac accaggccga ctcagagtag tagctcagtc 120
caccaatagt gaggaaatca ttgaaggaga atataatacg gtgatgctgg caataggaag 180
agatgcttgc acaagaaaaa ttggcttaga aaccgtaggg gtgaagataa atgaaaagac 240
tggaaaaata cctgtcacag atgaagaaca gaccaatgtg ccttacatct atgccattgg 300
cgatatattg gaggataagg tggagctcac cccagttgca atccaggcag gaagattgct 360
ggctcagagg ctctatgcag gttccactgt caaagtgtga ctatgaaaat gttccaacca 420
ctgtatttac tcctttggaa tatgg 445

<210> 20
<211> 211
<212> DNA
<213> Homo sapien

<400> 20
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atcccagagg acccataagt gccggtgaca agctgtctgt caggggagag gctccagaac 120
ctgggttcgt ccccagtgag accggaggat gatcccccaa ggactgcgca gcatcagctc 180
ttggtgggcc tctgccttct cttctgtttg g 211

<210> 21
<211> 396
<212> DNA
<213> Homo sapien

<400> 21
tgcccctgta ttggattgcc acacggctca cattgcatgc aagtttgctg agctgaagga 60
aaagattgat cgccgttctg gtaaaaagct ggaagatggc cctaaattct tgaagtctgg 120
tgatgctgcc attgttgata tggttcctgg caagcccatg tgtgttgaga gcttctcaga 180
ctatccacct ttgggtcgct ttgctgttcg tgatatgaga cagacagttg cggtgggtgt 240
catcaaagca gtggacaaga aggctgctgg agctggcaag gtcaccaagt ctgcccagaa 300

agctcagaag gctaaatgaa tattatccct aatacctgcc accccactct taatcagtgg 360
tggaagaacg gtctcagaac tgtttgtttc aattgg 396

<210> 22
<211> 277
<212> DNA
<213> Homo sapien

<400> 22
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aagccggcaa tctgctcccc gctgtccccg tacttcacta accagggccg gcgctgcacc 120
tccatcttct ggttgaggga atccacaaac cactcatccc ccatgaaatt gcaggccatg 180
tctacatctc cattatataa taggatctgg gatttctgtg agctaagcag cttcagatac 240
tgggagttca tgcttcggta gagacggcgg tactgta 277

<210> 23
<211> 634
<212> DNA
<213> Homo sapien

<400> 23
tctgaccatc catatccaat gttctcattt aaacattacc cagcatcatt gtttataatc 60
agaaactctg gtccttctgt ctggtggcac ttagagtctt ttgtgccata atgcagcagt 120
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aaaactaagc tgcattgtgg gttttgaaaa ggttattata cttcttaaca attctttttt 240
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tgctctattt tagatagatt aacattaacc aacataattt tttttagatc gagtcagcat 360
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ttgtctgaag aaaggaaaga ggaaagcaaa tacgaattgt actatttgta ccaaatcttt 480
gggattcatt ggcaaataat ttcagtgtgg tgtattatta aatagaaaaa aaaaattttg 540
tttcctaggt tgaaggtcta attgatacgt ttgacttatg atgaccattt atgcactttc 600
aaatgaattt gctttcaaaa taaatgaaga gcag 634

<210> 24
<211> 512
<212> DNA
<213> Homo sapien

<400> 24
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aaagaaaaat cataaaaatc ataaaaagtt atttctttga aaagatcaat gaaatttagc 120
aagactgaca cagataaaaa ggaattagac ccaaatcagt gaacaggaat gaaatagagg 180
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gtgctcataa atttgacaat gtagaggaaa tatctttagt tttaattagc tttttatttt 300
agtttttctc aaaaactaaa acttaataaa actcaaccaa gacaaaatag acaatcagaa 360
tgtaggcata cctcagagat gtggcggatt tggtttcaga ctactgcaat aaaccaaata 420
tggcaataaa aggagtcaca gaaagtggtt tcccagtgta tatatataaa agttacattt 480
actctatgaa gtgcaataac attttgtcta aa 512

<210> 25
<211> 461
<212> DNA
<213> Homo sapien

<400> 25
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ttgttcattg aaatctctag ccatttccct ggttaaacag gataatcttt ttttttcact 120
aaagaacatt cgtggtggtt tagtgatgag gttaatattc ccctcttgtc cacctccaca 180
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ggatacctga aaatgtgatt ttatatattc ttggcatcca ggggagaaaa atcaaaaagc 360
aaggaagtta cagttatctc cccagaaatt aatgggtcat gtcaagacta taggttttca 420
tttccttctg ttgcttgtta gaatgatgtt cttgtgggaa a 461

<210> 26
<211> 317
<212> DNA
<213> Homo sapien

<400> 26
tgctggagtc ggaactgctg cctttgtttg gcggccttgt ttcttaaatc agttccctct 60
taggatttat tacactaaaa aaaaattagt ttttgaaaag aaataggaga atacagaaac 120
atgaatttca cgaggctatc atctaacagt gggggctttc tacacacgtg gtgccaaaat 180
gtgtcattct gagtcaattg caattcctct ctaggagtga aaagagataa aagataagcc 240
aagaaccctg gacagattct tggtgttggt gacaaagagg aaaggacctg agaatggggc 300
tggtggggag aggggggg 317

<210> 27
<211> 250
<212> DNA
<213> Homo sapien

<400> 27
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ttcttccatt atttttttcct cctaccactg agttttgtaa tgaattcctt gtgtatacaa 180
gcaatacagg tgaatactaa actgttattt ttagcttctt caaaagctat tttagaaagc 240
ttcctggaaa 250

<210> 28
<211> 532
<212> DNA
<213> Homo sapien

<400> 28
cctatatcat tcatttatac agaagctgct tgctgcttag caagttggtg ggtttgattt 60
tccttggttg ctttgcagac ctcccttgag aggattcctt ctggatggag atttctttgt 120
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ccaaaagaaa gaatctgaaa agaggaatgt gacagtacag cctgatgacc ccatttcctt 480
catgcaacta actgctaaga atgaaatgaa ctgcaaggaa gatcagtttc ag 532

<210> 29
<211> 486
<212> DNA

<213> Homo sapien

<400> 29
ctgtttttgg acttaattaa cywttgcaag tggaaaccaa gaaataattg tagcataact 60
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ttgatctccc acaccaaaag agaaaataat atttatatgg aagtaatttt attttagtgt 180
ttgtgattta ttgtggagag caggbgttta aaaattttag aatttctttt taacaaaatc 240
aaatacattg ttaaggtaac aaagaataat tcactatttc agcatttcaa agcaacatat 300
tctacaactt caaagatatt tgcaaaaata atacaactgt tgaagttcaa atgttatgga 360
aagaaacatt agaagtatga aaagtggtac aaaaacatgt ttctttttat tctcttggat 420
atatatctat atatttagga aaatacatat atgtatgtgt atgtatatat atgtatgaaa 480
atatac 486

<210> 30
<211> 240
<212> DNA
<213> Homo sapien

<400> 30
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aatgtctctt gaccccagtt ccaagttcac cctgttgcct gttcttcctc ccaccttttg 120
gggttctata actgcatccc ccacacatct ttcaccacca ccccatacat accagctctc 180
ctgttgtggg attcaggaca taggaagagt tgctgaaggc acgggtgctt ttgggattcg 240

<210> 31
<211> 233
<212> DNA
<213> Homo sapien

<400> 31
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tgggggaagc catccaagag aagatccaag agaaggctgt gaagcgggag gacctgttca 120
tcgtcagcaa gttgtggccc actttctttg agagacccct tgtgaggaaa gcctttgaga 180
agaccctcaa ggacctgaag ctgagctatc tggacgtcta tcttattcac tgg 233

<210> 32
<211> 233
<212> DNA
<213> Homo sapien

<400> 32
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ctgtgtgtac tctgtccagt tcctttagaa aaaatggatg cccagaggac tcccaaccct 120
ggcttggggt caagaaacag ccagcaagag ttaggggcct tagggcactg ggctgttgtt 180
ccattgaagc cgactctggc cctggccctt acttgcttct ctagctctct agg 233

<210> 33
<211> 319
<212> DNA
<213> Homo sapien

<400> 33
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ctggaattgc ttggttctcc tccatgtggc ctctccagta ggctagctca ggcttattca 120

catgatggct tcaggattcc aaagagagtg agagtagaag ctgaaagact tcttgagttc 180
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atcacaaggc tttacccaga ttcaagggat gagaaacaga ctacatgtct tgatgagggg 300
aaccacaaag agcttgtgg 319

<210> 34
<211> 340
<212> DNA
<213> Homo sapien

<400> 34
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caactgccag atggatgtgg ctggaagtca gaggacattc tcgtgggttc gtgggcctag 120
ggtacaaatg acctcagcgt gacagcaaac aggacagaga agaccaggct cttactcagg 180
aatccaccag ccaggagaat gacaatgttg aacaccggaa ccctgatgat atctgtcaca 240
tttgtaaggt tgatttcaga gtcaggagtg gagacatcgg cagttgactt gggtggagct 300
tgggtcacag ttctggggct ggtatagagt gggcacaagg 340

<210> 35
<211> 170
<212> DNA
<213> Homo sapien

<400> 35
acatgggtcc ttcactcctc gctgagatgt tgcggcagcc ttttcttcca atgcggttgt 60
ggcaggagaa tccacggatg taatgttttc accttttttcc ctgagggtgc tttctgagga 120
accagycctt aagaggtggg gtcttggatt cctgacccag gcgtccggca 170

<210> 36
<211> 475
<212> DNA
<213> Homo sapien

<400> 36
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ttgatctccc acaccaaaag agaaaataat atttatatgg aagtaatttt attttagtgt 180
ttgtgattta ttgtggagag caggtgttta aaaattttag aatttcttta acaaaattct 240
aaagagaaaa taaaaaagaa atcacagtat ttacagagat aacagaatgg cttagccatg 300
caaaacaaat aactttggtt tttccccttt tactttggtt taaatgttga ccaagattca 360
atttttttttc ctgccaaata aaacttcaat aaaagtttag aggcaaaata acgtattttc 420
ttttttttccc ataatatttt atacagcatc gagtctaaga atattttatg cattt 475

<210> 37
<211> 246
<212> DNA
<213> Homo sapien

<400> 37
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ccaggcagcc aggggctagg acctcatgga tcagcagcaa gtccagcagg ttgtagtcag 120
cgaaggagat ctggtctccc acaatgaagg tcttgcctcc ctggttctgg gacagcaggg 180
tctcaaaagg cttcagttgc ccgggcagtg ccttcacata gtcatccttg cccacctcat 240
agttgg 246

<210> 38
<211> 512
<212> DNA
<213> Homo sapien

<400> 38
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aagaaaaaag tgactttcaa ctcttcttcc atcattttta tcatcaccag tgatgaatca 120
ctgtcagttg acgacagcga caaaaccaat gggtccaaag ttgatgtaat ccaagttcgt 180
cctttgtagg aatgaagaat ggcaacgaaa gatggggcct taaattggat gccacttttg 240
gactttcatc ataagaagtg tctggaatac ccgttctatg taatatcaac agaaccttgt 300
ggtccagcag gaaatccgaa ttgcccatat gctcttgggc ctcaggaaga ggttgaacaa 360
aaacaaattc ttttaattca acgggtgctt tacataatga aaaaaccact tgtggcacac 420
gatgggcatc taacatcatc atcttctaat gtgttggaga ttttcatttc aaatatattt 480
tttaaattac tctattttcc aaaacacgta at 512

<210> 39
<211> 370
<212> DNA
<213> Homo sapien

<400> 39
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tgccctycca tctccctaac ccccctcac agggatgcct cctcccaagg ctccagaaac 180
tctgaccctc gcactgctgg agggagccca tgaattgctg gtcaatatcg ctcatcctct 240
akactccatc ctgcgtgtgc ttcttcctac aagagctaga gaggcactga ctgataaata 300
cctgtcacct gcccctttcc cagagggtga aactccaccc actcccactg cagaaatgaa 360
tcttaaatgg 370

<210> 40
<211> 204
<212> DNA
<213> Homo sapien

<400> 40
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ggagcagagc agaccttgtt tttagtggtt ccatgggata aaatgggatt ggaggagcta 120
gaagaattca gggtctggtc caatctgcca gtcttcctga aatatcgaaa atacaccagg 180
gctgctatat cagagccacc ctgg 204

<210> 41
<211> 447
<212> DNA
<213> Homo sapien

<400> 41
caggcagcaa ttcgtaaaga attaaatgag tacaaaagta atgaaatgga ggtacatgca 60
tcaagcaagc acttgacaag attccacagg ccatagagat tttcttctga gaagaatttg 120
tgtttaattt tttgatacca acactgaaca ttcatcaggg aactttcctg aagttcagct 180
caagactacc ctacctgctg tgtttgtgag aagagtagga tcacacacac aggtgcaatc 240
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tctgaggagt gtgaactgtt ggggtcagtt aagacccaac ataactctat cagaagaaaa 360

ctgttgtttg cctttcaacc ttgttttaca gttctgcagt gtagtggagg acgggcaacg 420
tgcatgtgca ggctcaccac tcccagg 447

<210> 42
<211> 498
<212> DNA
<213> Homo sapien

<400> 42
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attagattct cattgcactg aactatattt atatgcctaa gtatgtagaa gtaaaattat 120
ataccccaaa aggattttat cttgttgtat atattaaatg ttatttctgc atatagggtc 180
ttttatggag aaactgatga tgataagctt aatactcact tgtttagcag catctgaatg 240
cacaaatgct ttatatatct cttctgcttt acagggcaaa agatcagact ctgttttctt 300
atagtcttca caagccagcc agaactcaat attctcctca ctgaattcag actttaggaa 360
acttccaaag acattttgac cagtttggtt ggcaagaagt tttccagag attgagacca 420
ttgcattact tcagcagcag aaagtacatc cttggacttg gaagatttca ttccagattc 480
cagatgtggg atcataga 498

<210> 43
<211> 312
<212> DNA
<213> Homo sapien

<400> 43
caggaaggcg gccaagaatg tgagtgcaaa gattggttcc tgagagcccc gagaagaaaa 60
ttcatgacag tgtctgggct gccaaagaag cagtgcccct gtgatcattt caagggcaat 120
gtgaagaaaa caagacacca aaggcaccac agaaagccaa acaagcattc cagagcctgc 180
cagcaatttc tcaaacaatg tcagctaaga agctttgctc tgcctttgta ggagctctga 240
gcgcccactc ttccaattaa acattctcag ccaagaagac agtgagcaca cctaccagac 300
actcttcttc tc 312

<210> 44
<211> 417
<212> DNA
<213> Homo sapien

<400> 44
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ccttctcaag ccatgtctca gagctgagag gcatcccagc aagttttgca gctcacagtt 120
ttttccgtaa attacttatt ctataaaatt ggagtaggcc ataaactttg gagggcccta 180
gaccaatttt ttggattatt tttcgtcttc tatcattccg ctgatcttag atattctctg 240
cattaaatat taaatatcac ttctaggctg aaaaatcccc ctaaaaatat ttctagctca 300
gatttttcct ccaaattctg caatagaaga tcacaatgtg aactctgcat ctccatgtta 360
aagtctaatg gacattcaca cttagcatgt ctcaaagaaa tctcatgtaa accatgg 417

<210> 45
<211> 494
<212> DNA
<213> Homo sapien

<400> 45
cgcgtgtctg tggtatgtgt acacgtgcat gttctgcatg tctgtaggtc acacatgctt 60
tggtgcatgt acacgtgtgt gtgtgtatgc gtgtaggagc tcacacttgt gtacacgttt 120

gtgtgcatgc atgtgtgcag gagcttgcac gtttgtggtg ggtacatgta catatgtgag 180
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gtgtgaatca gtgaccgtgt ctctgaccaa catgctgaat tacaaattga taatttatta 420
acctgtgcag caacaaataa gatttttcaa aactcaacaa agtgctcaaa gttgacatta 480
cttgcttcaa agtt 494

<210> 46
<211> 516
<212> DNA
<213> Homo sapien

<400> 46
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cttctattgc taattttgtg acctccaaag ctttacttct cggaacctcc tcctttggcc 120
gtcatttgat cattcaactc tttgtcagtg gcaactcccg ctatttggt gtgttggttt 180
gttactacac agtgagcaca aacatggtgg tccaatacag aggctcttcc tgtcaggtgt 240
caaccagaaa gttcatctaa cactgtgata tttgcatcct tcttgaacag ttgttggctg 300
aagattcatt tgatgaatcg atttttcaaa agagatgatt cttggttctt ccgagcgctc 360
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ctttcacaca ctctagcatt ccttcactgg ggtcttcatt gccccacatt gggcagccag 480
gaatgttggg gtgatcagac acaacaccag gtcatg 516

<210> 47
<211> 459
<212> DNA
<213> Homo sapien

<400> 47
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tatagcattg ggcacactcc agcagacgcc cgaattcaaa tcctggaagg atggaagaaa 120
cgcctggaga atatttggga tgagacacca ctgtattttg ctccaagcag cctctttgac 180
ctaaacttcc aggcaggatt cttaatgaaa aaagaggtac aggatgagga gaaaaacaag 240
aaatttggcc tttctgtggg ccatcacttg ggcaagtcca tcccaactga caaccagatc 300
aaagctagaa aatgagattc cttagcctgg atttccttct aacatgttat caaatctggg 360
tatctttcca ggcttccctg acttgcttta gtttttaaga tttgtgtttt tctttttcca 420
caaggaataa atgagaggga atcgaksaaa aaaaaaaaa 459

<210> 48
<211> 430
<212> DNA
<213> Homo sapien

<400> 48
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tcgttctcac cattcagcca ctgataggag ccatcgctgc aggaaatgct gtgattataa 120
agccttctga actgagtgaa aatacagcca agatcttggc aaagcttctc cctcagtatt 180
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agcagcgatt tgaccacatt ttctatacgg gaaacactgc ggttggcaaa attgtcatgg 300
aagctgctgc caagcatctg acccctgtga ctcttgaact gggagggaaa agtccatgtt 360
atattgataa agattgtgac ctggacattg tttgcagacg cataacctgg ggaaaataca 420
tgaattgtgg 430

<210> 49
<211> 288
<212> DNA
<213> Homo sapien

<400> 49
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agctttggwg caattcccat cgaccagagt tggtccgacc agccttggaa aggtcactga 120
aaaatcttca attggattat gttgacctct accttattca ttttccagtg tctgtaaagc 180
caggtgagga agtgatccca aaagatgaaa atggaaaaat actatttgac acagtggatc 240
tctgtgccac gtgggaggcc rtggagaagt gtaaagatgc aggattgg 288

<210> 50
<211> 411
<212> DNA
<213> Homo sapien

<400> 50
ccagagaatg acattcatgt ccccgtggat cccttgcaga gagtacatgg agccactgcc 60
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agcgtaagtg taagcaaact ctcctatgaa cactcgctca aaccagcctt tcagaatggc 180
agggactcca aaccactgca gggggaactg gaatatcaca aggtctgcgg cttccagctt 240
cttttgttca gccacaatat ctgggctcag atggccttct ttataagcca gaacagactc 300
ggcaggatac tgaaagttcg cagggtcctt cagtttacct gtgatgtcct ttctggaaat 360
gatgggattg aagttcatgg catagaggtc cgactccacc acctcccatc c 411

<210> 51
<211> 503
<212> DNA
<213> Homo sapien

<400> 51
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tcagttgtaa ataatgaatt aggggccaaa atgcaaaacg aaaaatgaag cagctacatg 180
tagttagtaa tttctagttt gaactgtaat tgaatattgt ggcttcatat gtattatttt 240
atattgtact tttttcatta ttgatggttt ggactttaat aagagaaatt ccatagtttt 300
taatatccca gaagtgagac aatttgaaca gtgtattcta gaaaacaata cactaactga 360
acagaagtga atgcttatat atattatgat agccttaaac ctttttcctc taatgcctta 420
actgtcaaat aattataacc ttttaaagca taggactata gtcagcatgc tagactgaga 480
ggtaaacact gatgcaatta aga 503

<210> 52
<211> 503
<212> DNA
<213> Homo sapien

<400> 52
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taatatccca gaagtgagac aatttgaaca gtgtattcta gaaaacaata cactaactga 360

acagaagtga atgcttatat atattatgat agccttaaac ctttttcctc taatgcctta 420
actgtcaaat aattataacc ttttaaagca taggactata gtcagcatgc tagactgaga 480
ggtaaacact gatgcaatta aga 503

<210> 53
<211> 531
<212> DNA
<213> Homo sapien

<400> 53
tttttttttt tttttaaaat gaggatattt tattatttca ggtaattttc ccagaggkga 60
gaatagtaca tgggaaattc tctttaggcc aggtctagta ttacagkgtg gkgctcaagg 120
ccgcccatca gaacagtgat actctcccaa cagatttcat ccaccccgtc tccactaact 180
tttgccataa aaattcctct gaattgtatc ttcttggaag aagtaaatat ctgttcgact 240
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gaagacaaaa cagtgccaca aataagcagt agatgaccct gtgacaagac ggcattgcag 420
aacaaagact gacgtttaaa ggggagtcat gcagagtaac atgggaacac aagcctgaca 480
acctggtcag cttccactta ctctagctcc tttgaactct caacactaaa a 531

<210> 54
<211> 450
<212> DNA
<213> Homo sapien

<400> 54
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taaaatgaaa aggcactctc gtgttctcct cactctgtgc actttgctgt tggtgtgaca 120
aggcatttaa agatgtttct ggcattttct ttttatttgt aaggtggtgg taactatggt 180
tattggctag aaatcctgag ttttcaactg tatatatcta tagtttgtaa aaagaacaaa 240
acaaccgaga caaacccttg atgctccttg ctcggcgttg aggctgtggg gaagatgcct 300
tttgggagag gctgtagctc agggcgtgca ctgtgaggct ggacctgttg actctgcagg 360
gggcatccat ttagcttcag gttgtcttgt ttctgtatat agtgacatag cattctgctg 420
ccatcttagc tgtggacaaa gggggtcag 450

<210> 55
<211> 648
<212> DNA
<213> Homo sapien

<400> 55
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caagtcaaaa gacattgttc tggttgccta tagtgctctg ggatcccacc gagaagaacc 180
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ccagttgact tcagaggaga tgaaagccat agatggccta aacagaaatg tgcgatattt 420
gacccttgat atttttgctg gcccccctaa ttatccattt tctgatgaat attaacatgg 480
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caagctacag caaagcccat tggccggaaa aaatatcaag ggtcaaat 648

<210> 56

<211> 536
<212> DNA
<213> Homo sapien

<400> 56
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aaactataga actcttcatt gtcagcaaag caaagagtca ctgcatcaat gaaagttcaa 120
gaacctcctg tacttaaaca cgattcgcaa cgttctgtta ttttttttgt atgtttagaa 180
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ccacacaaca tacgagccgg aagcataaag tgtaaagcct ggggtgccta atgagt 536

<210> 57
<211> 391
<212> DNA
<213> Homo sapien

<400> 57
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gaaaatttat tgtttattgg catgtgaccc ttgactgatg gcttcattag cattytgttt 360
ttctttttgg atccttaata gaaaactcaa t 391

<210> 58
<211> 455
<212> DNA
<213> Homo sapien

<400> 58
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acatgtttac aataatgagg agcaggttgg actgg 455

<210> 59
<211> 398
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(398)
<223> n = A,T,C or G

<400> 59
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ctacaaagtg tctccaacta gaaatgatca atgaagtgag aaattgttga gaaggataca 360
gtttgttttt agatgtcctt tgtccaatgt gaacattt 398

<210> 60
<211> 532
<212> DNA
<213> Homo sapien

<400> 60
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gatatgcctg ggtgagccta ggagggaagg ctctgatttg gatttctcca gtcaaagctc 180
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agagcgagca ggaaaagagg tcttggagcc tgggactgat ggtggataag gcctggaaag 480
aasatgacsa ggaggaggag agagggaagt gggtggatga ggagcaggct ga 532

<210> 61
<211> 466
<212> DNA
<213> Homo sapien

<400> 61
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ataaaatggt ctgtgagcag aagctcctga agggagaggg ccccaagacc tcgtggacca 420
gagaactgac caacgatggg gaactgatcc tgaccatgac ggcgga 466

<210> 62
<211> 548
<212> DNA
<213> Homo sapien

<400> 62
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caccaagttc tgatatcttt taaagacata gttcaaaatt gcttttgaaa atctgtattc 180
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aggttttctt cttattttta gataattcaa gtgcttagat aaattatgtt ttctttaagt 360
gtttatggta aactctttta aagaaaattt aatatgttat agctgaatct tttggtaac 420
tttaaatctt tatcatagac tctgtacata tgttcaaatt agctgcttgc ctgatgtgtg 480

tatcatcggt gggatgacag aacaaacata tttatgatca tgaataatgt gctttgtaaa 540
aagatttc 548

<210> 63
<211> 547
<212> DNA
<213> Homo sapien

<400> 63
tttccaaagc ggagacttcc gacttcctta caggatgagg ctgggcattg cctgggacag 60
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atcttgcagc atttttctta aggctatgct tcagtttttc tttgtaagcc atcacaagcc 180
atagtggtag gtttgccctt tggtacagaa ggtgagttaa agctggtgga aaaggcttat 240
tgcattgcat tcagagtaac ctgtgtgcat actctagaag agtagggaaa ataatgcttg 300
ttacaattcg acctaatatg tgcattgtaa aataaatgcc atatttcaaa caaaacacgt 360
aatttttta cagtatgttt tattaccttt tgatatctgt tgttgcaatg ttagtgatgt 420
tttaaaatgt gatcgaaaat ataatgcttc taagaaggaa cagtagtgga atgaatgtct 480
aaaagatctt tatgtgttta tggtctgcag aaggattttt gtgatgaaag gggatttttt 540
gaaaaat 547

<210> 64
<211> 528
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(528)
<223> n = A,T,C or G

<400> 64
cacctmctcc csccwggcgc ttwctcsgac gccttgccca scgggccgcc cgaccccctg 60
srccatggac cccgctcgcc csctggggmt gtygatkctg ctgcttttcc tgrckgaggc 120
tgcactgggc gatgctgatc argagccaac aggaaataac rcggagatct gkctcctgcc 180
cctagactac kgaccctgcc kggccctact tytccgytac tactacgaca ggyacacgca 240
gagctgccgc cwgttcctgk rckggggctg crasggcaac rccaacwatt yctacacckg 300
kgaggmttrc gackatgctw gstggargat agaaaaagtt cccaaasttt gccggctgma 360
agtgaatgag gacnaccagg gtgaggggta cacagataag tatttcttta atctaakkwc 420
catgacatgw gaaaaattct ttnncggtgg gngtcaccgg accggattga gaacangttt 480
gcagatgang ctactgggat gggctcctgc rcacnaaaga aantatca 528

<210> 65
<211> 547
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(547)
<223> n = A,T,C or G

<400> 65
kgaatgaasa acgaacgctg gaagtagaaa tagagcctgg ggtgagagac ggcatggagt 60
accccttat tggagaaggt gagcctcacg tggatgggga gcctggagat ttacggttcc 120

gaatcaaagt tgtcaagcac ccaatatttg aaaggagagg agatgatttg tacacaaatg 180
tgacagtctc attagttgag tcactggttg gctttgagat ggatattact cacttggatg 240
gtcacaaggt acatatttcc cgggataaga tcaccaggcc aggagcgaag ctatggaaga 300
aaggggaagg gctccccaac tttgacaaca acaatatcaa gggctctttg ataatcactt 360
ttgatgtgga ttttccaaaa gaacagttaa cagaggaagc gagagaangt atcaaacagc 420
tactgaaaca agggtcagtg cagaaggtat acaatggact gcaaggatat tgagagtgaa 480
taaaattgga ctttgtttaa aataaagtga ataagcgata tttattatct gcaaggtttt 540
ttttgtg 547

<210> 66
<211> 535
<212> DNA
<213> Homo sapien

<400> 66
ggggaggtct acgcttctag agcttgagcc agcggggcga ccctgcagtg gcaggactcg 60
gcaccgcgcc ctccaccgcc ggttggtggc ctgcgtgaca gtttcctccc gtcgacatcg 120
aaaggaagcc ggacgtgggc gggcagagag cttcatcgca gtaggaatgg cagccccatc 180
tatgaaggaa agacaggtct gctgggggc ccgggatgag tactggaagt gtttagatga 240
gaacttagag gatgcttctc aatgcaagaa gttaagaagc tctttcgaat caagttgtcc 300
ccaacagtgg ataaaatatt ttgataaaag aagagactac ttaaaattca aagaaaaatt 360
tgaagcagga caatttgagc cttcagaaac aactgcaaaa tcctaggctg ttcataaaga 420
ttgaaagtat tctttctgga cattgaaaaa gctccactga ctatggaaca gtaatagttt 480
gaatcatagt gaacatcaat acttgttccc tatatacgac acttgataat taaga 535

<210> 67
<211> 527
<212> DNA
<213> Homo sapien

<400> 67
atttctgcca cttaattcaa acagtcatat gcaggtcgct taatttattt gtgcttttgt 60
ttcatcttct acaaggccct cttagctcta aaacttgaca gtggaataag gaaatgtttt 120
tccaaatctg cattgccggt gagatcctca acatcagcat gttgagatgg acctcaaccc 180
cacctctaac cctgaaacac actactcgat attatcttag gtatgtttta gggtttagtt 240
tgtaaaataa taatttattt ttgaaggaaa tataaaatat taaagagtaa taatagctat 300
catttttaa gattcaatct aaaacaatgg actctttttt tttccatttg tgatgtagat 360
aagcaagaca attttgatca tgagtggtga aaagaggatc aaacttgact attcttgcaa 420
tggcagtcca gcaacaagcc tttcatttac attaaattat aactttcat tcattcctaa 480
accaaactta aaattctgct ttcctttgag tagaaggtat ttaactt 527

<210> 68
<211> 431
<212> DNA
<213> Homo sapien

<400> 68
gggaaacttc atgggtttcc tcatctgtca tgtcgatgat tatatatgga tacatttaca 60
aaaataaaaa gcgggaattt tcccttcgct tgaatattat ccctgtatat tgcatgaatg 120
agagatttcc catatttcca tcagagtaat aaatatactt gctttaattc ttaagcataa 180
gtaaacatga tataaaaata tatgctgaat tacttgtgaa gaatgcattt aaagctattt 240
taaatgtgtt tttatttgta agacattact tattaagaaa ttggttatta tgcttactgt 300
tctaatctgg tggtaaaggt attcttaaga atttgcaggt actacagatt ttcaaaactg 360
aatgagagaa aattgtataa ccatcctgct gwtcctttag tgcaatacaa taaaactctg 420

aaattaaaac t 431

<210> 69
<211> 399
<212> DNA
<213> Homo sapien

<400> 69
gacacggcgg acacacacaa acacagaacc acacagccag tcccaggagc ccagtaatgg 60
agagccccaa aaagaagaac cagcagctga aagtcgggat cctacacctg ggcagcagac 120
agaagaagat caggatacag ctgagatccc agtgcgcgac atggaaggtg atctgcaaga 180
gctgcatcag tcaaacaccg gggataaatc tggatttggg ttccggcgtc aaggtgaaga 240
taatacctaa agaggaacac tgtaaaatgc cagaagcagg tgaagagcaa ccacaagttt 300
aaatgaagac aagctgaaac aacgcaagct ggttttatat tagatatttg acttaaacta 360
tctcaataaa gttttgcagc tttcaccaar aaaaaaaaa 399

<210> 70
<211> 479
<212> DNA
<213> Homo sapien

<400> 70
cgcggcggag ctgtgagccg gcgactcggg tccctgaggt ctggattctt tctccgctac 60
tgagacacgg cggacacaca caaacacaga accacacagc cagtcccagg agcccagtaa 120
tggagagccc caaaaagaag aaccagcagc tgaaagtcgg gatcctacac ctgggcagca 180
gacagaagaa gatcaggata cagctgagat cccaggtgct gggaagggaa atgcgcgaca 240
tggaaggtga tctgcaagag ctgcatcagt caaacaccgg ggataaatct ggatttgggt 300
tccggcgtca aggtgaagat aatacctaaa gaggaacact gtaaaatgcc agaagcaggt 360
gaagagcaac cacaagttta aatgaagaca agctgaaaca acgcaagctg gttttatatt 420
aggatatttg acttaaacta tctcaataaa gttttgcagc tttcaccaaa aaaaaaaaa 479

<210> 71
<211> 437
<212> DNA
<213> Homo sapien

<400> 71
ctcagcggct gccaacagat catgagccat cagctcctct ggggccagct ataggacaac 60
agaactctca ccaaaggacc agacacagtg rgcaccatgg gacagtgtcg gtcagccaac 120
gcagaggatg ctcaggaatt cagtgatgtg gagagggcca ttgagaccct catcaagaac 180
tttcaccagt actccgtgga gggtgggaag gagacgctga ccccttctga gctacgggac 240
ctggtcaccc agcagctgcc ccatctcatg ccgagcaact gtggcctgga agagaaaatt 300
gccaacctgg gcagctgcaa tgactctaaa ctggagttca ggagtttctg ggagctgatt 360
ggagaagcgg ccaagagtgt gaagctggag aggcctgtcc gggggcactg agaactccct 420
ctggaattct tgggggg 437

<210> 72
<211> 561
<212> DNA
<213> Homo sapien

<400> 72
ggatggtata ctgtaaattc agcatatgga gataccatta tcataccttg ccgacttgac 60
gtacctcaga atctcatgtt tggcaaatgg aaatatgaaa agcccgatgg ctccccagta 120

tttattgcct tcagatcctc tacaaagaaa agtgtgcagt acgacgatgt accagaatac 180
aaagacagat tgaacctctc agaaaactac actttgtcta tcagtaatgc aaggatcagt 240
gatgaaaaga gatttgtgtg catgctagta actgaggaca acgtgtttga ggcacctaca 300
atagtcaagg tgttcaagca accatctaaa cctgaaattg taagcaaagc actgtttctc 360
gaaacagagc agctaaaaaa gttgggtgac tgcatttcag aagacagtta tccagatggc 420
aatatcacat ggtacaggaa tggaaaagtg ctacatcccc ttgaaggagc ggtggtcata 480
atttttaaaa aggaaatgga cccagtgact cagctctata ccatgacttc caccctggag 540
tacaagacaa ccaaggctga c 561

<210> 73
<211> 916
<212> DNA
<213> Homo sapien

<400> 73
ggagaaaata aggtggagtc ctacttgttt aaaaaatatg tatctaagaa tgttctaggg 60
cactctggga acctataaag gcaggtattt cgggccctcc tcttcaggaa tcttcctgaa 120
gacatggccc agtcgaaggc ccaggatggc ttttgctgcg gccccgtggg gtaggaggga 180
cagagagaca gggagagtca gcctccacat tcagaggcat cacaagtaat ggcacaattc 240
ttcggatgac tgcagaaaat agtgttttgt agttcaacaa ctcaagacga agcttatttc 300
tgaggataag ctctttaaag gcaaagcttt attttcatct ctcatctttt gtcctcctta 360
gcacaatgta aaaaagaata gtaatatcag aacaggaagg aggaatggct tgctggggag 420
cccatccagg acactgggag cacatagaga ttcacccatg tttgttgaac ttagagtcat 480
tctcatgctt ttctttataa ttcacacata tatgcagaga agatatgttc ttgttaacat 540
tgtatacaac atagccccaa atatagtaag atctatacta gataatccta gatgaaatgt 600
tagagatgct atatgataca actgtggcca tgactgagga aaggagctca cgcccagaga 660
ctgggctgct ctcccggagg ccaaacccaa gaaggtctgg caaagtcagg ctcagggaga 720
ctctgccctg ctgcagacct cggtgtggac acacgctgca tagagctctc cttgaaaaca 780
gaggggtctc aagacattct gcctacctat tagcttttct ttattttttt aactttttgg 840
ggggaaaagt atttttgaga agtttgtctt gcaatgtatt tataaatagt aaataaagtt 900
tttaccatta aaaaaa 916

<210> 74
<211> 547
<212> DNA
<213> Homo sapien

<400> 74
agtggcatta acttttagaa tttgggctgg tgagattaat ttttttaat atcccagcta 60
gagatatggc ctttaactga cctaaagagg tgtgttgtga tttaattttt tcccgttcct 120
ttttcttcag taaacccaac aatagtctaa ccttaaaaat tgagttgatg tccttatagg 180
tcactacccc taaataaacc tgaagcaggt gttttctctt ggacatacta aaaaatacct 240
aaaaggaagc ttagatgggc tgtgacacaa aaaattcaat tactgtcatc taatgccagc 300
tgttaaaagt gtggccactg agcatttgat tttataggaa aaaatagtat ttttgagaat 360
aacatagctg tgctattgca catctgttgg aggacatccc agatttgctt atactcagtg 420
cctgtgatat tgagtttaag gatttgaggc aggggtaatt attaaacata ttgcttctat 480
tcttggaaaa atagaagkgt aaaatgttaa taatacaaat gtcactgtga cctcctccac 540
tgagagg 547

<210> 75
<211> 793
<212> DNA
<213> Homo sapien

<400> 75
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tgaggaagtt gcaagccaac aaaaaagttc aaggatctag aagacgatta agggaaggtc      60
gttctcagtg aaaatccaaa aaccagaaaa aaatgtttat acaaccctaa gtcaataacc     120
tgaccttaga aaattgtgag agccaagttg acttcaggaa ctgaaacatc agcacaaaga     180
agcaatcatc aaataattct gaacacaaat ttaatatttt tttttctgaa tgagaaacat     240
gagggaaatt gtggagttag cctcctgtgg agttagcctc ctgtggtaaa ggaattgaag     300
aaaatataac accttacacc ctttttcatc ttgacattaa aagttctggc taactttgga     360
atccattaga gaaaaatcct tgtcaccaga ttcattacaa ttcaaatcga agagttgtga     420
actgttatcc cattgaaaag accgagcctt gtatgtatgt tatggataca taaaatgcac     480
gcaagccatt atctctccat gggaagctaa gttataaaaa taggtgcttg gtgtacaaaa     540
ctttttatat caaaggcttt tgcacatttc tatatgagtg ggtttactgg taaattatgt     600
tattttttac aactaatttt gtactctcag aatgtttgtc atatgcttct tgcaatgcat     660
atttttaat ctcaaacgtt tcaataaaac catttttcag atataaagag aattacttca     720
rattgagtaa ttcagaaaaa ctcaagattt aagttaaaaa gtggtttgga cttgggaaca     780
ggactttata cct                                                        793
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<210> 76
<211> 461
<212> DNA
<213> Homo sapien

<400> 76
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accttgcact attcccctca gtccatctat cgaggtcttt gcaggaagca tactgggaat      60
tgaaacgaga gcctaaatga catctaagaa aggcagtgtt caataccagg tattaggtga     120
ggatgggatt ctaaggacat cagtgggagg cagggagcca ccttcagacc tcagcatgga     180
agcttccaag atccagagga agaggcaaca gcactgagag tcataggtag aagaatcatc     240
acagccctgc taaccaggca gctgatgccc ctctcccctg gctccctgtg tccaaatcct     300
acaggggcat ctgttggctg aactcaacct gaagccaaag agaagatgag tggagagagg     360
caacatttat agagctcagg tttctagggc tggagaggga tctggaggga cacacaggag     420
acacctggca taaccaaaaa atgattaaaa aaaaaaaaaa a                         461
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<210> 77
<211> 642
<212> DNA
<213> Homo sapien

<400> 77
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ggttgcacga aacacactgg ggaatggagc aaaacagtct ttgaatatcg aacacgcaag      60
gctgtgagac tacctattgt agatattgca ccctatgaca ttggtggtcc tgatcaagaa     120
tttggtgtgg acgttggccc tgtttgcttt ttataaacca aactctatct gaaatcccaa     180
caaaaaaaat ttaactccat atgtgttcct cttgttctaa tcttgtcaac cagtgcaagt     240
gaccgacaaa attccagtta tttatttcca aaatgtttgg aaacagtata atttgacaaa     300
gaaaaatgat acttctcttt ttttgctgtt ccaccaaata caattcaaat gctttttgtt     360
ttattttttt accaattcca atttcaaaat gtctcaatgg tgctataata aataaacttc     420
aacactcttt atgataacaa aaaaaarawa wattctttga atcctagccc atctgcagag     480
caatgactgt gctcaccagt aaaagataac ctttctttct gaaatagtca aatacgaaat     540
tagaaaagcc ctccctattt taactacctc aactggtcag aaacacagat tgtattctat     600
gagtcccaga agatgaaaaa aattttatac gttgataaaa ct                        642
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<210> 78
<211> 519
<212> DNA
<213> Homo sapien

<400> 78
gcagaagaag aagcggacct tccgcaagtt cacctaccgc ggcgtggacc tcgaccagct 60
gctggacatg tcctacgagc agctgatgca gctgtacagt gcgcgccagc ggcggcggct 120
gaaccggggc ctgcggcgga agcagcactc cctgctgaag cgcctgcgca aggccaagaa 180
ggaggcgccg cccatggaga agccggaagt ggtgaagacg cacctgcggg acatgatcat 240
cctacccgag atggtgggca gcatggtggg cgtctacaac ggcaagacct tcaaccaggt 300
ggagatcaag cccgagatga tcggccacta cctgggcgag ttctccatca cctacaagcc 360
cgtaaagcat ggccggcccg gcatcggggc cacccactcc tcccgcttca tccctctcaa 420
gtaatggctc agctaataaa aggcgcacat gactccaaaa aaaaaaaaaa aagggcggcc 480
gccaccgcgg gggagctcca cttttgttcc ctttaatga 519

<210> 79
<211> 526
<212> DNA
<213> Homo sapien

<400> 79
gtctggaggc ggtgtcctct ccgccctgtc gggtcctgga tgagtacgag ttatggtcac 60
ggtcacagcc tgatctctta tgtgttcata gccattcgct ctcccatcag aactgtttgt 120
cctgaatgtg ttcctctagt tctagaaaat gaccactaat ttaaaaaact cggttgtgag 180
gtttgcccag aggcacttgt tccagaattt cccctcctgc ttcagccatg tccttgtcac 240
ttggcattct aagctaaagc tttagcttcc caattcgtga tgtgctaggc caagattcgg 300
gagctgttgc cagcctcgtc aaatatggaa gagaaacaac ctgcggtcaa aagggagtga 360
tttgttaagt ggtgcgcgtc tatctcataa ctagatgtac caaccaggga agggccaagg 420
atggaaaggg gtaacttttg tgcttccaaa gtagctaagc agaagtgggg gagcagttta 480
gccagatgat ctttgattag gcaaacattg agttttaaag aggctg 526

<210> 80
<211> 281
<212> DNA
<213> Homo sapien

<400> 80
gttatattag tgggtagtgt aacattttat ccaggttggg gtgaggggag atggccacag 60
tagcaagtgg tgacactaaa taccattttg aaggctgatg tgtatataca tcattactgt 120
ccgtagcaat gaaggataca gtactgtgtt gtgggtgagt gttgctattg cccagcatta 180
atatttgggt gtgtatgttt gaggctatga aacacgcagg agtgtttttg tgctattaat 240
tttaagagaa agcagctttt tcttaaaatt cactgttgag a 281

<210> 81
<211> 405
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(405)
<223> n = A,T,C or G

<400> 81
gtgggtggga gcgcgtgctg ttgggagttg cttggaggtt ggcggcgcgg ggctgaaggc 60
tagcaaaccg agcgatcatg tcgcacaaac aaatttacta ttcggacaaa tacgacsacg 120
aggagtttga statcgacat gtcatgctgc ccaaggacat akccaasctg gtccctaaaa 180
cccatctgat gtctgaatct gaatggagga atcttggcng ttcagmagan tcagggatgg 240

gtccattata tgatccatga nccagaacct cdcatcttgc tgttccggcg scccacttac 300
cccaanaaac caamgaaatg aaccttggct actacttttc aatcctcaaa kcttttcaca 360
vhtgaccttc cttcctaaca ttctttmtga taaacattta ttaag 405

<210> 82
<211> 547
<212> DNA
<213> Homo sapien

<400> 82
tagtttttaa gaagaaattt tttttggcct atgaaattgt taaacctgga acatgacatt 60
gttaatcata taataatgat tcttaaatgc tgtatggttt attatttaaa tgggtaaagc 120
catttacata atatagaaag atatgcatat atctagaagg tatgtggcat ttatttggat 180
aaaattctca attcagagaa atcatctgat gtttctatag tcactttgcc agctcaaaag 240
aaaacaatac cctatgtagt tgtggaagtt tatgctaata ttgtgtaact gatattaaac 300
ctaaatgttc tgcctaccct gttggtataa agatattttg agcagactgt aaacaagaaa 360
aaaaaaatca tgcattctta gcaaaattgc ctagtatgtt aatttgctca aaatacaatg 420
tttgatttta tgcactttgt cgctattaac atcctttttt tcatgtagat ttcaataatt 480
gagtaatttt agaagcatta ttttaggaat atatagtkgt cacagtaaat atcttgtttt 540
ttctatg 547

<210> 83
<211> 529
<212> DNA
<213> Homo sapien

<400> 83
ctattctaag agatgctctt agtgatcttg cattacactt tctgaataaa atgaagatca 60
tggtgattaa ggatattgaa agagaagaca ttgaattcat ttgtaagaca attggaacca 120
agccagttgc tcatattgac caatttactg ctgacatgct gggttctgct gagttagctg 180
aggaggtcaa tttaaatggt tctggcaaac tgctcaagat tacaggctgt gccagccctg 240
gaaaaacagt tacaattgtt gttcgtggtt ctaacaaact ggtgattgaa gaagctgagc 300
gctccattca tgatgcccta tgtgttattc gttgtttagt gaagaagagg gctcttattg 360
caggaggtgg tgctccagaa atagagttgg ccctacgatt aactgaatat tcacgaacac 420
tgagtggtat ggaatcctac tgcgttcgtg cttttgcaga tgctatggag gtcattccat 480
ctacactagc tgaaaatgcc cggcctgaat cccatttcta cagtaacag 529

<210> 84
<211> 527
<212> DNA
<213> Homo sapien

<400> 84
cccatcacca gaatcccttc atgggaggga tggatgcctg ttgaaactca ctgacctatt 60
ggactgacgc tggggtggta tcttcatcag agctattgta agtcatccaa aaggcttctg 120
acgaaagaac aatttttaaa aagtccctct tttcaatcaa gccaatgtcc tattttattt 180
ctaaaagttt tgggactcgt gctgttatca agtacaatga aaatggcttt ataaatagct 240
gttttgacat tgtgatagaa ggcttgaata cggaggaaag atgtcgctgg agctagtcct 300
gagttccgac tgtccctgtg gtgggaatcc agtctgggaa agcaggactg ttttagcaaa 360
cgtgtactcg ttctataaaa atggaatctg ttctgcaggt taccgtccct ccccgcccaa 420
gcatcccctc tgtcctgtct ctctgctgct gggacccagg gcttttttcag ctgcagaacc 480
cactggactt ccaggaatca aggaaaaagt ggaaatgtcc aactgtg 527

<210> 85

<211> 401
<212> DNA
<213> Homo sapien

<400> 85
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cagtgtggtg gaattcccaa gatagaaatg aaaaactctt ttatagagtg ctgacatctg      60
acattgagaa attcatgcct attgtttata ctcccactgt gggtctggct tgccaacaat     120
atagtttggt gtttcggaag ccaagaggtc tctttattac tatccacgat cgagggcata     180
ttgcttcagt tctcaatgca tggccagaag atgtcatcaa ggccattgtg gtgactgatg     240
gagagcgtat tcttggcttg ggagaccttg gctgtaatgg aatgggcatc cctgtgggta     300
aattggctct atatacagct tgcggaggga tgaatcctca agaatgtctg cctgtcattc     360
tggatgtggg aaccgaaaat gaggagttac ttaaagatcc a                         401
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<210> 86
<211> 547
<212> DNA
<213> Homo sapien

<400> 86
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gaagcctctt gtgtttgtgt gcagagaagt atatgatcca ccatgctaat gacacttgcc      60
tttttttcca ccattaaggc tttaagaaca tgtggaataa gtttttagc tgctaatgac     120
aaaacaaatc ctgtaactac ccagccagca agtatatagc acagaacact gtgttacttt     180
acaagggctt atgtgactgg aataaggtgg tcccacttga ctgttccaaa gagcagcttc     240
tcagatcttc agtgttcact ggtaaatttc taacagtgta tttgtgtaaa gtttgtcatt     300
tcatactcca tacactacag ttgctgtcac tgatccctgt tttgctggct tttaagctac     360
ttggtcaaaa atcctgcttc cttaaaacat agagaattaa tgagcatctc aagcttttc      420
ttttcctttt taatgatgcc tgcactatca agagtattct agtgttctct ctttgtttgg     480
catataatca tgcaccaaac tttttatttc tttaaggtgg gagtatattt ttatttccta     540
aatgcca                                                               547
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<210> 87
<211> 530
<212> DNA
<213> Homo sapien

<400> 87
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tttggcacct atgcgcctgc agaggttcct aaaagtaaag ctctagaggc cgtcaaattg     120
gcaatagaag ccgggttcca ccatattgat tctgcacatg tttacaataa tgaggagcag     180
gttggactgg ccatccgaag caagattgca gatggcagtg tgaagagaga agacatattc     240
tacacttcaa agctttggag caattcccat cgaccagagt tggtccgacc agccttggaa     300
aggtcactga aaaatcttca attggactat gttgacctct atcttattca ttttccagtg     360
tctgtaaagc caggtgagga agtgatccca aaagatgaaa atggaaaaat actatttgac     420
acagtggatc tctgtgccac rtgggaggcc atggagaagt gtaaagatgc aggattggcc     480
aagtccatcg ggtgtccaa cttcaaccac aggctgctgg agatgatcct                530
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<210> 88
<211> 529
<212> DNA
<213> Homo sapien

<400> 88
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acctgagcta agaaggataa ttgtcttttg gtaactaggt ctacaggttt acatttttct      60
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atcttttcta taagtttaca gccttttttct tatatataca gttattgcca cctttgtgaa 180
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agtagaaatt cactgccttc ccctcctgtc catgaccttg ggcacaggga agttctggtg 420
tcatagatat cccgttttgt gaggtagagc tgtgcattaa acttgcacat gactggaacg 480
aagtatgagt gcaactcaaa tgtgttgaag atactgcagt catttttgt 529

<210> 89
<211> 547
<212> DNA
<213> Homo sapien

<400> 89
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tcctttttct cagatgtagc tgagtcttga tcattttaag acaacgatgg gtagaatttt 180
gagattaatg ttaattttcc ctttttgtta atttcagtcc cctctcacta tgcttttgtc 240
cagaaggatc aagaattcta ccatcccttg ggtctttgtg tataaacaat gttaaataaa 300
ggtagactca gtctttaaga tattagacag ttttttagt ccatgggatt gtaaatataa 360
acattaactt tcctataaga atattttggc tttgtaatct atagcctcaa attggtattt 420
attatggatt cactagacaa acagctgttt ccttattgtc ttttttcttt agtgtttctg 480
atttgctatc agtagctgtt tttaaagcca tccaaggaaa ataattattt acagtttttg 540
aagtcac 547

<210> 90
<211> 528
<212> DNA
<213> Homo sapien

<400> 90
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gttgccgccg ccgcccccac tgctgtgtcc tttccagact ccagggctcc ccgggctgct 180
ctggatccca ggactccggc tttcgccgag ccgcagcggg atccctgtgc acccggcgca 240
gcctaccctt ggtggtctaa acggatgctg ctgggtgttg cgacccagga cgagatgcct 300
tgtttctttt acaataagtt gttggaggaa tgccattaaa gtgaactccc cacctttgca 360
cgctgtgcgg gctgagtggt tggggagatg tggccatggt cttgtgctag agatggcggt 420
acaagagtct gttatgcaag cccgtgtgcc agggatgtgc tgggggcggc cacccgctct 480
ccaggaaagg cacagctgag gcactgtggc tggcttcggc ctcaacat 528

<210> 91
<211> 547
<212> DNA
<213> Homo sapien

<400> 91
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acaatctcat catcctgaag cctataatga agaaaaagat ctagaaactg agttgtggag 180
ctgactctaa tcaaatgtga tgattggaat taraccmttt ggscyttgra ccttymtwrg 240
raaaawgrmc cmacctttyt taacmtgrac cwccytmatc tctagaagct gggatggact 300
tactatyctk gttwatattt taaatackga aaggtgctat gcttctgtta ttattccaag 360
actggagata ggcagggcta aaaaggtatt attatttttc ctttaatgat ggtgctaaaa 420

ttcttcctat aaaattcctt aaaaataaag atggtttaat cactaccatt gtgaaaacat 480
aactgttaga cttcccgttt ctgaaagaaa gagcatcgtt ccaatgcttg ttcactgttc 540
ctctgtc 547

<210> 92
<211> 527
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(527)
<223> n = A,T,C or G

<400> 92
gctggctagt aggggaacat gtagtagcca agcccatgca ttgcagtgca cagagcaaca 60
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tgaaggtatg gtggaacaag tggcctcacc aaggtcggac cccaatggac tttttgcctc 180
ttgggagctt atgggtctat gaggacacag tagcctttcc tatcagcaaa ctggagtgga 240
tgttgtatct gggggtggcc ttatgtacct gctactgttc tccccacatt gcccagatgc 300
ctgtataact gggaggcact gkgctctcag tttttgcgaa tgtgatgagc cccctggtgt 360
ttctaccctt ttggcaatga ctatccctgg agncatgtgt caaaactgta aagcacaatt 420
tactgctctt tgcggagcac accgctcatg ctctgaatta cacctgaktg tccctcctcc 480
wgktawtgaa tgaggttgat cnvatcagaa adgtggkgtt ggcmata 527

<210> 93
<211> 531
<212> DNA
<213> Homo sapien

<400> 93
ggtattcata cagccttcct aaaggcaatg ctttccacag gatttaagat accccagaaa 60
ggcatcctga taggcatcca gcaatcattc cggccaagat tccttggtgt ggctgaacaa 120
ttacacaatg aaggtttcaa gctgtttgcc acggaagcca catcagactg gctcaacgcc 180
aacaatgtcc ctgccacccc agtggcatgg ccgtctcaag aaggacagaa tcccagcctc 240
tcttccatca gaaaattgat tagagatggc agcattgacc tagtgattaa ccttcccaac 300
aacaacacta aatttgtcca tgataattat gtgattcgga ggacagctgt tgatagtgga 360
atccctctcc tcactaattt tcaggtgacc aaactttttg ctgaagctgt gcagaaatct 420
cgcaaggtgg actccaagag tcttttccac tacaggcagt acagtgctgg aaaagcagca 480
tagagatgca gacaccccag ccccattatt aaatcaacct gagccacatg t 531

<210> 94
<211> 547
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(547)
<223> n = A,T,C or G

<400> 94
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aagaatgttt ccattggaat tgttggtaaa gacttggagt ttacaatcta tgatgatgat 120

gatgtgtctc cattcctgga aggtcttgaa gaaagaccac agagaaaggc acagcctgct 180
caacctgctg atgaacctgc agaaaaggct gatgaaccaa tggaacatta agtgataagc 240
cagtctatat atgtattatc aaatatgtaa gaatacaggc accacatact gatgacaata 300
atctatactt tgaaccaaaa gttgcagagt ggtggaatgc tatgttttag gaatcagtcc 360
agatgtgagt tttttccaag caacctcact gaaacctata taatggaata cattttttctt 420
tgaaagggtc tgtataatca ttttctagaa agtatgggta tctatactaa tgtttttata 480
tgaagaacat aggtgtcttt gtggttttaa agacaactgt gaaataaaat tgtttcaccg 540
cctggtn 547

<210> 95
<211> 1265
<212> DNA
<213> Homo sapien

<400> 95
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ctaactggga aagacccagg gagactggga tggctcatg attctacata cagaactcat 120
ccaagaaagg aggaaaagct gatttttgtg aacgtcgcta cttgtgcctg aactaactct 180
caggcacatt agtcagaaaa tactacctat ggttactccc ccaggttcct aaaagtaaag 240
ctttagaggc caccaaattg gcaattgaag ctggcttccg ccatattgat tctgctcatt 300
tatacaataa tgaggagcag gttggactgg ccatccgaag caagattgca gatggcagtg 360
tgaagagaga agacatattc tacacttcaa agctttggtg caattcccat cgaccagagt 420
tggtccgacc agccttggaa aggtcactga aaaatcttca attggattat gttgacctct 480
accttattca ttttccagtg tctgtaaagc caggtgagga agtgatccca aaagatgaaa 540
atggaaaaat actatttgac acagtggatc tctgtgccac gtgggaggcc gtggagaagt 600
gtaaagatgc aggattggcc aagtccatcg ggtgtccaa cttcaaccgc aggcagctgg 660
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tgctcttgga ggacccagtc ctttgtgcct tggcaaaaaa gcacaagcga accccagccc 900
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cccctaatta tccattttct gatgaatatt aacatggagg gcattgcatg aggtctgcca 1140
gaaggccctg cgtgtggatg gtgacacaga ggatggctct atgctggtga ctggacacat 1200
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ccaga 1265

<210> 96
<211> 568
<212> DNA
<213> Homo sapien

<400> 96
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aaagtgctct agaaattgtc agtggtttac atgaagtggc catgggtgtc tggagcaccc 120
tgaaactgta tcaaagttgt acatatttcc aaacattttt aaaatgaaaa ggcactctcg 180
tgttctcctc actctgtgca ctttgctgtt ggtgtgacaa ggcatttaaa gatgtttctg 240
gcattttctt tttatttgta aggtggtggt aactatggtt attggctaga aatcctgagt 300
tttcaactgt atatatctat agtttgtaaa aagaacaaaa caaccgagac aaacccttga 360
tgctccttgc tcggcgttga ggctgtgggg aagatgcctt ttgggagagg ctgtagctca 420
gggcgtgcac tgtgaggctg gacctgttga ctctgcaggg ggcatccatt tagcttcagg 480
ttgtcttgtt tctgtatata gtgacatagc attctgctgc catcttagct gtggacaaag 540
gggggtcagc tggcatgaga atattttt 568

<210> 97
<211> 546
<212> DNA
<213> Homo sapien

<400> 97
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gggttgtatc ctgccaggtt gagtggggct cacacgctag ggtgagatgt cagaaagcgc 120
ttgtatttta aacaaccaaa aagaattgta agggtggctt gctgccaggc ttgcactgcc 180
gttcctgggg gtgtgcatct tcgggaaagg tggtggcggg gcgtccacta ggtttcctgt 240
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tttcttgtac tttgtaagtc gtttgcgaga atgcagacca cctcactaaa ctgtaaacgg 360
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ttccacctga agacttgtgt taaagttcta cagcgcgcac tgttaactga acgtcttttt 480
cttcagccta tacgcggatc cttgttttga gctctcagaa tcactcagac aacattttgt 540
aactgc 546

<210> 98
<211> 547
<212> DNA
<213> Homo sapien

<400> 98
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aaccaaccta gaatcacata gcaaatgaca gaagccagag gcctcccaag tctctctaac 180
tccaaaccct atgcttactc tactatatca cactaccttg caataggaca aagggaatat 240
gtggtaaact atgttcccag catctaaaag ccaggagtgg ttttcatttt tctttaagaa 300
gatgatagtg tgatttgaaa catatctgaa tttcagaaga ggggactttt aaaaattgcc 360
actcataagg aaagaaagaa ctttttcaca tatttttgaa agaaacgatg gtgagaagat 420
attcttgata atagagatat gctaacattt gctttgggtg ttttgtaggt tagatttttt 480
tggtgtgtac tttataggct tgcatattgc ttactttaaa cagctgaagt tctaagtaag 540
agtgttc 547

<210> 99
<211> 122
<212> DNA
<213> Homo sapien

<400> 99
cagcctttct gtcatcatct ccacagccca cccatcccct gagcacacta accacctcat 60
gcaggcccca cctgccaata gtaataaagc aatgtcactt ttttaaaaca aaaaaaaaaa 120
aa 122

<210> 100
<211> 449
<212> DNA
<213> Homo sapien

<400> 100
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ggggatgtgc taaagcgtga aatcagttgt ccttaatttt tagaaagatt ttggtaacta 120
ggtgtctcag ggctgggttg gggtccaaag tgtaaggacc ccctgccctt agtggagagc 180

tggagcttgg agacattacc ccttcatcag aaggaatttt cggatgtttt cttgggaagc 240
tgttttggtc cttggaagca gtgagagctg ggaagcttct tttggctcta ggtgagttgt 300
catgcgggta agttgaggtt atcttgggat aaagggtctt ctagggcaca aaactcactc 360
taggtttata ttgtatgtag cttatatttt ttactaaggt gtcaccttat aagcatctat 420
aaattgagtt ctttttctta gttgtatgg 449

<210> 101
<211> 131
<212> DNA
<213> Homo sapien

<400> 101
ccatgttctc tcttgactac gcatatgtga gatttgcccc tccgccccgc tcgtgatagc 60
catccagatc ttttacctgg ccctgtcttg gagaatctgt tttcaatctc cactgattgc 120
ccccttgctg g 131

<210> 102
<211> 199
<212> DNA
<213> Homo sapien

<400> 102
ctgctgcgcc tgatgctggg acagccccgc tcccagatgt aaagaacgcg acttccacaa 60
acctggattt tttatgtaca accctgaccg tgaccgtttg ctatattcct ttttctatga 120
aataatgtga atgataataa aacagctttg acttgaaaaa aaaaaaaaaa aaaaaaaaaa 180
aaaaaaaaaa aaaaaaaaa 199

<210> 103
<211> 321
<212> DNA
<213> Homo sapien

<400> 103
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aaatcatttg aacaaaaaaa aatggcactc tgattaaact gcattacagc ctgcaggaca 120
ccttgggcca gcttggtttt actctagatt tcactgtcgt cccaccccca cttctttcac 180
cccacttttt ccttcaccaa catgcaaagt ctttccttcc ctgccaccca gataatatag 240
acagatggga aaggcaggcg cggccttcgt tgtcagtagt tctttgatgt gaaaggggca 300
gcacagtcat ttaaacttga t 321

<210> 104
<211> 309
<212> DNA
<213> Homo sapien

<400> 104
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gcttgttagg atagttaaaa aagctgccta ttggctggag ggagaggctt aggcaaaacc 120
cctattactt tgcaaggggc ccttcaaaag tctctgggct tctatttcaa ccgcgatgat 180
gtggctctgg aaggcgtgag ccactttttc cgggaactgg ccaaggaaaa gcccgagggc 240
tacaaccgtt tcctgaaaat gcaaaaccag cggggcggcc gcgctctttt ccaggacatc 300
aaaaagcca 309

<210> 105

<211> 591
<212> DNA
<213> Homo sapien

<400> 105
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gttttaacct aagcgcctca catgactaac tcctcatcca tcaagaatga gctcagctct 120
cacttcccca ctcctcaccc ccctgtaaag taacctttct ccaaggttat gcttcaacag 180
gaatagctaa catttattaa attgtggcac gtaagtatct tggatatatt ggctcattga 240
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<210> 106
<211> 450
<212> DNA
<213> Homo sapien

<400> 106
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tttgcttaaa atatcattag acctaatatt tttttcaaag gcacaaagtt taaacatggg 180
gggggcgggt gttgagaggg gtctgggata cccttaaacc caaaaaagtg atttgttccc 240
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agcactcacc ttcttgggga aggggcatca ggttggcaca ggaaaggccc aagtgagggg 360
ccactctgta cattaatact ttggtgatta atgtttgggg agaggcagga ttctcaccca 420
cctttttgac ttcaaacact ctcactcaag 450

<210> 107
<211> 116
<212> DNA
<213> Homo sapien

<400> 107
tcgacgaaag ttactgtcac tcagttgtaa atccatcagc ttttcacctg ttaaaaattt 60
tgcaaaatat acatgttctc ctcctgtttt caattcttcc atcttttttc ttgagg 116

<210> 108
<211> 291
<212> DNA
<213> Homo sapien

<400> 108
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cgagtagcgt cctcccaccc aatcccagaa ctcgaacatg ttttgagggt caattccaaa 120
ctccttcact ttggttgtgt tagtagacag ggcaacaaag tgcttcgcca ctgcagtagg 180
atccttggcc gcctggagaa accactcctt cgccgtctct gcattcgtga tggtctcctg 240
ggtagtaaag gtcttggagg caatgatgaa cagggaggac tcggggttca g 291

<210> 109
<211> 662

<212> DNA
<213> Homo sapien

<400> 109
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caccagaagt gtgagaacgc ctaccccggc aacatcacag acaccatggt gtgtgccagc 120
gtgcaggaag gggcaagga ctcctgccag ggtgactccg ggggccctct ggtctgtaac 180
cagtctcttc aaggcattat ctcctggggc caggatccgt gtgcgatcac ccgaaagcct 240
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tagactggac ccacccacca cagcccatca ccctccattt ccacttggtg tttggttcct 360
gttcactctg ttaataagaa accctaagcc aagaccctct acgaacattc tttgggcctc 420
ctggactaca ggagatgctg tcacttaata atcaacctgg ggttcgaaat cagtgagacc 480
tggattcaaa ttctgccttg aaatattgtg actctgggaa tgacaacacc tggtttgttc 540
tctgttgtat ccccagcccc aaaagacagc tcctggacct tgccccgggg cggcccgctc 600
ggaaaggggg cgaaatttct tcaagaatat ttccatttcc acaaacttgg ggccgggggc 660
cc 662

<210> 110
<211> 323
<212> DNA
<213> Homo sapien

<400> 110
tcctgtgaaa cagcccattt tcctacctac tgtgggttgc tgctcaggag gaacgatata 60
cgccaataca agcaggaaat ctgcagctcc tctgctatgt gcctcagaac actttcaatt 120
tttctggtca atgctctgat taggtatcat acataaaagc cagcatatta gtttaaatct 180
ctaacaaaaa actatatttt ccaaagtcat tatcatttgg gccaattaag tgatcttttc 240
gtgctttgtt gagcttcatc tttagggcat ctcttctttc ttcccattca tgaagttcgg 300
catttccatg tgcaaattta cag 323

<210> 111
<211> 336
<212> DNA
<213> Homo sapien

<400> 111
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ggggcctccc ccatcccagc ttctccacca tcccagcaag tcaggatatc agacagtcct 120
cccctgaccc tccccttgt agatatcaat tcctaaacag agccaaatac tctatatcta 180
tagtcacagc cctgtacagc atttttcata agttatatag taaatggtct gcatgatttg 240
tgcttctagt gctctcattt ggaaatgagg caggcttctt ctatgaaatg taaagaaaga 300
aaccactttg tatattttgt aataccacct ctgtgg 336

<210> 112
<211> 218
<212> DNA
<213> Homo sapien

<400> 112
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cacccgtgc cacagacctt cctcggttgc agagattctg ggcaaagcat ccgtgctctc 180
atgagattat cctggggaga tttagaagaa ttttgtgg 218

<210> 113
<211> 533
<212> DNA
<213> Homo sapien

<400> 113
ctgcaccgac agttgcgatg aaagttctaa tctcttccct cctcctgttg ctgccactaa 60
tgctgatgtc catggtctct agcagcctga atccaggggt cgccagaggc cacagggacc 120
gaggccaggc ttctaggaga tggctccaga aaggcggcca agaatgtgag tgcaaagatt 180
ggttcctgag agccccgaga agaaaattca tgacagtgtc tgggctgcca aagaagcagt 240
gcccctgtga tcatttcaag ggcaatgtga agaaaacaag acaccaaagg caccacagaa 300
agccaaacaa gcatcccaga gcctgccagc aatttctcaa acaatgtcag ctaagaagct 360
ttgctctgcc tttgtaggag ctctgagcgc ccactcttcc aattaaacat tctcagccaa 420
gaagacagtg agcacaccta ccagacactc ttcttctccc acctcactct cccactgtac 480
ccacccctaa atcattccag tgctctcaaa aagcatgttt ttcaagatct aaa 533

<210> 114
<211> 261
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(261)
<223> n = A,T,C or G

<400> 114
ccatatctgc tcggcgctac ttctttcttg gattgatcct gantgatgca ttggcgatgc 60
ctttggagaa ggacatgtga tgtgatggtc ttcacgttcc acatgtactc gggcaaatag 120
ggggacaaac tgaagttaaa caggtcgaaa ctagaggagc tgctgaccct ggagctgacc 180
actttcttgg ggaaaaggac acatgaaggt gctttgcaaa agctgatgag caatctggac 240
accaacatag gacaacaacg t 261

<210> 115
<211> 267
<212> DNA
<213> Homo sapien

<400> 115
cctctcctgt gggttccaga ccctgttcca gcaacaattg ctgggacacc tgggccgact 60
gctccacctc gccaggccct ggccctctcc atctcagccc tgacagccac ccagtgataa 120
acacagcagg cttcctaagc aatgtgacgc accagagggg tggtggtaca cgttcccctt 180
gaagtcatct gaaaattaga gaacagattt gcctcatagc tgaagagaga ccctattcca 240
agcatgaatg gccttgacaa tgttcct 267

<210> 116
<211> 239
<212> DNA
<213> Homo sapien

<400> 116
ctgatgacct ggggtctagt gaaaatgcag ggtcagattc agtgggtctg ggtctgaat 60
ctctaaggcg ctgccaagtg atgctgatgc tcctggcttg tggaccaccc tgtgtatagc 120
aaagctctag actaggaggt ctcaaccttg gctgcacaga attatctggg gagtttttaa 180

atttcccagt gcccaggctg cattcatatc atagtagaga cagggttttg ccatgctgg 239

<210> 117
<211> 168
<212> DNA
<213> Homo sapien

<400> 117
aaaaaacttt tatattgctg catcttccac agttctttgg gtagtctctg aacttaaaat 60
ttgtaggagt tgtagactac ctaaattttt aagttatgga tttgttcata ggttgtaggg 120
gtaggtaaag aaggaaacag acaagaaaat ggcttcttga ggtggcag 168

<210> 118
<211> 150
<212> DNA
<213> Homo sapien

<400> 118
aaaaaaaaga gtttatttag aaagtatcat agtgtaaaca aacaaattgt accactttga 60
ttttcttgga atacaagact cgtgatgcaa agctgaagtg tgtgtacaag actcttgaca 120
gttgtgcttc tctaggaggt tgggtttttt 150

<210> 119
<211> 154
<212> DNA
<213> Homo sapien

<400> 119
aaactgtgtg agatattaac cagccgccct gttataaaat caggaaatcc aaacagcgat 60
ttacaccgat taacaccccc ttttatattt tttcaaatac actgagaaaa taatcaaacg 120
ttttcatctc tcttgtcttt ttttgttttt tcct 154

<210> 120
<211> 314
<212> DNA
<213> Homo sapien

<400> 120
ctgcgtggag tgacgggagg agggaatcac tgtgtgtgcg agagtgcttc agactcaatt 60
tccaaaataa ttttcacccc tctaagcatg taaattcaaa gatggatcct tcatagaaat 120
taaaaaatca atttgagctc atttcgaata cagaacaagt atggcacaga tggaagtcct 180
gccacgtttc ctttaatgat gctgactctt gtatcacaca ggccagcatg aagtttctta 240
ctcagacttt acaggcattt tccgtaattc aatcagtcct gctcccagca caacacagga 300
ggtgattcga gaat 314

<210> 121
<211> 601
<212> DNA
<213> Homo sapien

<400> 121
aaaaaaaacc taattcattg aagtaataac caaataattt tcaatcttga ttcaactgtg 60
attcaaatct tacaccattt gccccttcta tgaatttatg tataaaattt tttaagagtc 120
agagtttttt tttcttgatt aattggatgt atttcacaga atttccaact gctcacgtta 180

```
gttttcttcc ttttagagtt gatctctcta atgtattaga tcttcatgcc tttgatagtc     240
tctctggaat aagtttgcag aaaaaacttc agcatgtgcc aggaacacaa cctcaccttg     300
atcagagtat tgtacaatca catttgacgt accaggaaat gcaaaggaag aacatcttaa     360
tatgtttatt cagaatcttc tgtgggaaaa gaatgtgaga aacaaggaca atcactgcat     420
ggaggtcata aggctgaagg gattggtgtc aatcaacgac aaatcacaac aagtgattgt     480
ccagggtgtc catgagctct gtgatctgga ggagactcca gtgagctgga aggatgacac     540
tgagagaaca aatcgattgg tcctcattgg cagaaattta gataaggata tccttaaaca     600
g                                                                     601
```

<210> 122
<211> 486
<212> DNA
<213> Homo sapien

<400> 122

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ctgtttctaa ttgcttttgt gactgttacc ttttagttca tgccccccca aagagctaaa      60
tttcacattt ttacctacaa aattgatttt taattcctgc aaataattta ccattatgag     120
ctacaaggtg ggcaacagcg cctgaggatc taattttatg catattactc ccaagtattt     180
taacacttgt tggagaagca atatctggat caataaaaca ctgtcccatc aaccatttga     240
gtggggagag ggagaagctc ttctgtaagt aagattctgg caagctcttt gaaatgagtc     300
ttctttccca cagattttct ctactctttc aatacaaaca gataggagaa gagggaatag     360
aaacctggag gaacttgaat atttttgttc tagatagaga tacagttatt gaaaaggaaa     420
cctagaaagt agtcacacgt cgcttattta ggccagaagt aattgtactg ggcaaaaatt     480
tcactt                                                                486
```

<210> 123
<211> 239
<212> DNA
<213> Homo sapien

<400> 123

```
ctggtgggtc ttttttttcct ctcagagctc aagcctgtag tgcctgatgt catttctttc      60
aagttgccca cagtatctcc acttaaacta ggctagtaac caaaataatg tggaccttct     120
ttaggaaaca gtgtgggaga ataggagtcc agccgtaaga taaactggaa atatttgggc     180
gtcttgtacc tggctacgca ccacctcagt gttgttccta cataaacaag gcccctttt      239
```

<210> 124
<211> 610
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(610)
<223> n = A,T,C or G

<400> 124

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ccanccaagt cnttgatgat cactgacccn cgcgcgcctg ctggaccaag gtggctgcgg      60
ggaaatcgcc acngngcttt cggttttctt ggtgaaggaa tacaccgcgc cgacagcagg     120
ttttcagtca gggtcaggga ctgttgcttg cgcgcgaaaa tcaccggtac gccgaggttc     180
aggccggtca tgatcgccgg tgcaatgccc gaggcttcga tggtgacgat cttggtgatg     240
cccgaatcct tgaacaacgc agcgaattca tcaccgatca gtttcatcag cgccgggtcg     300
atctggtggt tcagaaaggc gtcgaccttg agtacctgat cggaaagcac gatgccttct     360
tcgcgaattt tcttgtgcag tgcttccacg aaagcttcct ctgttggcgc aacacgcgcc     420
```

gaaagtagat taaaaagtag tcgattctag cgctttaaca tcgcgcgtat atccgccagg 480
gcggtattgc cgcgaacggc tttgacttcg gttggtgtgt cgtcgttgcc ttcccatgcc 540
aggtcatccg gcggcagttc gtcaaggaac cggctggggg cacaatcaat gatctcgccg 600
tactgcttgc 610

<210> 125
<211> 196
<212> DNA
<213> Homo sapien

<400> 125
ctatagggct cgagcggccg cccgggcagg taaaaaatca gcccctaatt tctccatgtt 60
tacacttcaa tctgcaggct tcttaaagtg acagtatcct taacctgcca ccagtgtcca 120
ccctccggcc cccgtcttgt aaaaagggga ggagaattag ccaaacactg taagctttta 180
agaagaacaa agtttt 196

<210> 126
<211> 247
<212> DNA
<213> Homo sapien

<400> 126
aaattagtta aaaaaatgca ttcctcattt gatatagcca cattccaaat gcttaaaagc 60
cgcatgtatc tagtgactac catactggag agtacaaata tagaacttta cccgtcactg 120
cagacagttc tgttggattg tgcagcattg gacaatatat acagtttgcc tgtatatgag 180
aaagagagag agagagagag tgtgtgtgtg tgtgtgtgtg tgaagtgcaa taaggctgac 240
aggcatc 247

<210> 127
<211> 590
<212> DNA
<213> Homo sapien

<400> 127
cctccacggc atggcgcaat tgttgttcag gggccgccag gttgctgccc atgccgatgt 60
agatacgttc cacgtgctta ctcgccagac gcactcgaag cgtcgccagc gctacgtttg 120
cgcttgctgc cactgctgcg gcgacgcttt ttcgggccat cgccggtggc ttcgcctttg 180
ctgctgagct ctttgatcat ctcgcggcgc tggctgtcgt tggcgtcctg gtagtcggtc 240
caccactcgc caaggccgtc ggtctgttcg ccggcgcttt cacgcagcag caggaagtca 300
tagcccggca cggaagcgcg ggttgtccag caacaggtcg gcacgtttgc cgctgcggcg 360
tggcaggcgc tcctgcatgt cccagatttc acggatcggc atggtgaagc gtttcgggat 420
ggcgatgcgc tggcattgct cggcgatcag ctcgtgagca gcttcctgca tggctggaat 480
tgccggcatg ccacggtctt gcaggcgcat gacgcgtttc gaaagcgcgg gccacaacag 540
ggcggcaaag aggaacgccg gggtgaccgg tttgttctgc ttgatgcgca 590

<210> 128
<211> 361
<212> DNA
<213> Homo sapien

<400> 128
ctgcccatgg aaaccctcca ggagctgctg gacctgcaca ggaccagtga gagggaggcc 60
attgaagtct tcatgaaaaa ctctttcaag gatgtaacca aagtttccag aaagaattgg 120
agactctact agatgcaaaa cagaatgaca tttgtaaacg gaacctggaa gcatcctcgg 180

attattgctc ggctttactt aaggatattt ttggtcccct agaagaagca gtgaagcagg 240
gaatttattc taagccagga ggccataatc tcttcattca gaaaacagaa gaactgaagg 300
caaagtacta tcgggagcct cggaaaggaa tacaggctga agaagttctg cagaaatatt 360
t 361

<210> 129
<211> 546
<212> DNA
<213> Homo sapien

<400> 129
aaaaatacaa attcagtaag acttttgctc taacaacaat ttttcaaaac gaatcaacaa 60
caaaaaagta tccagtgttt cttttcttat gaagatataa taaaacacag tattggtaag 120
cacattttaa cagtatgctt ttcttttgta gggaaaggag atatggctat gtctaacatc 180
gtgggatcca atgtgtttga tatgttgtgc cttggtattc catggtttat taaaactgca 240
tttataaatg gatcagctcc tgcagaagta aacagcagag gactaactta cataaccatc 300
tctctcaaca tttcaattat ttttcttttt ttagcagttc acttcaatgg ctggaaacta 360
gacagaaagt tgggaatagt ctgcctatta tcatacttgg ggcttgctac attatcagtt 420
ctatatgaac ttggaattat tggaaataat aaaataaggg gctgtggagg ttgatattat 480
taatagtgtt atgcagaaaa tatgaatggc agggaggggc agagagaaaa atccatttct 540
tcattt 546

<210> 130
<211> 733
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(733)
<223> n = A,T,C or G

<400> 130
ggggcctctt cctaaaggca ctaatcccat ccaatagggc ttaacctcat gacttaatca 60
actttcaaag acaccacatc ctaatgccat cacatcagaa tttaggcttc aacatatgaa 120
ttttgggggg acacaaacat tcacctcata gcattcattg tttcttgtta ttggcaaagc 180
caagactcac attgtctaag ttatttgact tttgagtccg cagatgtgaa aacagtgcta 240
aacagtccag cttcatgagt ggagaacagc atttgtgaca accaccaaag tacctctgtg 300
gtcagtgtcc tcaaccaggg cacagcatca tggaccagag cctctgcagg gcacagagga 360
gtggtgagga acaggggctc tggagcaacc ccacttccct ctgctttgta tatggggggt 420
tctgcacatg actgcatttg aaaagggctt cactgcgctt gctgaaggag tgcacttgag 480
ctagcggaga gttcccagag ggtgtctgga agaagcaaag gctattcttt gtttcactca 540
gttatagatg gaagtcagac acttctgcct gaagtacttt cacacactcc acagtcttaa 600
gaaggatgga naaagcatgc caactactca naaaaccaca ggtgttcaag caatggtatc 660
cttttatncc tacaactagt ggacaaagng gggcctctgt aatttgggaa agctaggaaa 720
actttttctg ggg 733

<210> 131
<211> 305
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

<222> (1)...(305)
<223> n = A,T,C or G

<400> 131
aaacacatac gaatanttna actgtgatta tgaagtgaca gccggctaaa tatgtcttgt 60
attttctctc ttcctttttt tgctaactca tcctttattc cattcctgct tccatggtaa 120
tgcaggctca aataaattac taggatacaa gattacttca agcctctttt ctgtggaact 180
cataatatga taagcatttg ttacaagatt gcctgtagtt gtttagggga caaattatat 240
tagggaaaga aagtctttct ttagttggtt aaattttcta ttataattgg gtactaaatt 300
tattt 305

<210> 132
<211> 545
<212> DNA
<213> Homo sapien

<400> 132
aaacaatgct acactcattt ttggcaaagt gctgtattgt tcagtctgtg tacaaaactg 60
accatctatg aaccaatcag tataaaaaat ttctataaaa acaaaattta gacagcggct 120
caagaaaaca agctgccatt tatgcataga ttgatgtaca gtaacctaac caaatgtccc 180
ttttgaattt tcaagttact gaaaaaaaat gtgtcgagaa acacattaag aaggcacatg 240
tacagtctac aatactcttc agtctcccta actcatgccc tgcccctata aaggaaatat 300
gttcacaatt ttacttgaga aaaaaaaaca aagccactta aaaaaaaaaa aacacacacg 360
caattattaa agttcaaaat ctctggagga aaatacaagc aaaaccactc atacactcca 420
agcctgaaac acacatctaa cctccccagg tactggtttg gttttcagag gtccacctag 480
aaaacaaatc taaaacttca ggcaaaacag agcaaaactg gacatttaac aattacacaa 540
ttttt 545

<210> 133
<211> 330
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(330)
<223> n = A,T,C or G

<400> 133
aatatttatt actaatatct tataatgttt tgtggnacca tggcatacct tgggtactat 60
tgtaacanat agttcaggaa accctactat aaggtttatc aaatggtctc ataaacagtt 120
acttattcaa gcacgccaaa gctcagtgaa aagtattttt cacccttact ctttctcgtg 180
tcattcaaag agaagttttg atgtagtgta tttatttgta gggagtaatg aacagatcca 240
tttcacagta gactttgtgc tctaggtgat gcagctaatt gccccagttt ggaaaacatg 300
gacttggatg aattgtcttt tgtttgggac 330

<210> 134
<211> 627
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(627)

<223> n = A,T,C or G

<400> 134
aaatattact tcaaatacat tttaaagctc aacaaacttg tgttgaactg aattgcagat 60
cctgaactct atttgaaaat acatcatgaa acagaaaanc ccattccaaa tgaaaatgat 120
agtgctttgt tgggggtggg aatgaggcgg ggagactaaa tcactattaa cagacttctt 180
ttcccaatgc aatttgtcaa aagttcaaaa gttctgaaat gtactaaatc ttaagcaaat 240
taaattcatg atattactaa aactttttaa atagtgcaat gacttatcaa gttatagtgg 300
ctgcattaag aacaaattat tgtgtgaaat acctgtataa acacaaaata caattaaata 360
tttctttaca aaaagctgag cattacgcat aatagtggaa tgtctttcat taggtgtatt 420
ttttaaagat taacaaaagt aacatttcct aaaatgtata catgtgccat atttttgcaa 480
acatgcctga gaatgtattt aaaacatttc tgtagtaaga gtttgcaaga acttcacaaa 540
cctgcaaata aaatgcatct ttttaaaaag gtgaaaatgg catctccaca ctgcaacaat 600
tcaaaaagtg cagcatccct aatcttt 627

<210> 135
<211> 277
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(277)
<223> n = A,T,C or G

<400> 135
aaaatcaaat atattatttg ttaaaaatca gcttgtttca ttacnggaaa ttacaccagt 60
ccgttctatt tactttcaaa ccatattcaa ctcctcaact ttcaaacatg taatcaacta 120
atttcaaaag ggaaaaggta ccctttataa aggagagatc tgttaagaca ccaagaaatc 180
aaaattaata tcacttaata attaagtgga taacacatgc ctcccaatac agtgcagtga 240
gaaacacaaa acatcaattc ccgcgtactc tgcgttg 277

<210> 136
<211> 486
<212> DNA
<213> Homo sapien

<400> 136
aaaacagaat gaattcattg ttacagttac agaagtcaga agcccaaata cagtctgcct 60
gaaccaaagc cagggtcagc aaggttcctt tccactgttt tgccaacttc tagaggccac 120
ctgtattcct tggttcatgg cccctctctt catcatcaaa taatcagcat agctttatga 180
cattggcagc tctgattttg ctcttttgcc ttcctcttat gtagaccctt gtaattacat 240
tgggtacacc cagataaccc caaataatct ccctatctca agattcttaa tgtaattata 300
ttgggaaagt ccccttttgtc atataagata acatagcaat ggattccaag gattagtatg 360
tgagtttctt ttgaggggct ataattaacc ctaccacaat atggaaatgt ctattgtttt 420
tctatgtacc agaaataaga cattaggatg tgaaattaat aacataacac cacttacggc 480
atcacc 486

<210> 137
<211> 552
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(552)
<223> n = A,T,C or G

<400> 137
ccatcttgca tcaaatgttc ttaaggcagt gactggctat caaccacagt ttctgtctcc 60
ccagttgcaa acacaggatc catgcaacag ttctgagacc atacacttag aaaccacagg 120
ggatgcggat caaatgcaga actcccaaat tataaaacag tcaggctaca ctcaaaacaa 180
aacatagaac atcaacaaca cacatctccc aaaaaagaag tgcaacgcat gcttgtataa 240
accaacaata acaaaaaaac cacaataaaa aatgcagagt ctcccaaaca agttttcaaa 300
tgtattgcan aaagaaaaaa aatgtatata tatataaaat taaaaagtct gaaatactag 360
tgcatagtca attacctaac accaagtttc ttttctttct gtccaagctc tactgcccct 420
ctgatactag cagcatgtct acaggctaag accatagcag caaaaaacgt ttttcatttg 480
gcatttacaa aattaaatta ctgaataaaa atataatttt ttataaaact atttcttaca 540
gtaataattt tt 552

<210> 138
<211> 231
<212> DNA
<213> Homo sapien

<400> 138
aaattttact agtgttactt aatgtatatt ctaaaaagag aatgcagtaa ctaatgccct 60
aaatgtttga tctctgtttg tcattacttt ttcaaaatat ttttttctgt aaagtataat 120
atataaaact tcttgcttaa attgaatttc tatattagtg gttaattgca gtttattaaa 180
gggatcatta tcagtaattt catagcaact gttctagtgt tttgtgtttt t 231

<210> 139
<211> 535
<212> DNA
<213> Homo sapien

<400> 139
cagttgccaa ccctctgaac cgtttaggcc ggttcatcgc tgcctttgaa tctgggccgg 60
tggtgatccg gcaaggggtg aaaccaaaga gcgggggctg tgaggccctt cgcagtccct 120
cgtaagtcgc tgcgatggag tgaactatca cgcatcgtgt ttatttcgtc aacacgaaat 180
gtgatttatt tttgcgaatt aacacggcag ttctcggtta cgttttcgga aagcgtggga 240
tatgattctg tctatcctgt acggatatac agtaattacc gggaggggat tccatggcga 300
agaagcaggc ggcaccggca gcacggcagg aaatgagcgg tatggcgcgc ctcgggcttc 360
gcgtctcatc gatgattaat cacccggtcg cccagacgca gcgctgggtt acgattcatc 420
gcctggacac ggatggggat cgggagtggg aagaggttct gagcgtgatc gctgataccg 480
acgagctcga gctgacgctc aatgacgatg gcagtgtgac ggtgaggtgg gagca 535

<210> 140
<211> 640
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(640)
<223> n = A,T,C or G

<400> 140

acattggtgg cacttgaact gagtgcaaac cacaacattc ttcagattgt ggatgtgtgt 60
catgacgtag aaaaggatga aaaacttatt cgtctaatgg aagagatcat gagtgagaag 120
gagaataaaa ccattgtttt tgtggaaacc aaaagaagat gtgatgagct taccagaaaa 180
atgaggagag atgggtggcc tgccatgggt atccatggtg acaagagtca acaagagcgt 240
gactgggttc taaatgaatt caaacatgga aaagctccta ttctgattgc tacagatgtg 300
gcctccagag ggctaggtta gtacaaactc gcattcatgg cttggtttcc cagaagatct 360
ccatttaact tttttaaaga aagtttattg ctttctttaa cctgcatttt ttctaagttt 420
tttttcgcat aaaggtgctg tctttgtggc aaggcctagg catgacaatc ggaggactcg 480
agggggatgg aggactagtg atccggctgg ctgcttccag tcgattagag aggtgaaaaa 540
gctgaacgtg tgcccantna atcttcaaaa aggcagaaac atatcacctt ntgccccent 600
aaacttgttc tttttccgaa ggggaaaaaa aaaatggaaa 640

<210> 141
<211> 127
<212> DNA
<213> Homo sapien

<400> 141
aaaaatcaca cactgacaac acagaaatac gaaatgctag gaaaagtcta gcatatgaag 60
gaaaaacatg tcttatgcac tctaatataa ttttttcaat tagtataaag gcaaatgcgg 120
ttttttt 127

<210> 142
<211> 126
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(126)
<223> n = A,T,C or G

<400> 142
aaatatcctc tggatgcntt caagtaatac taatcatttc atgngnaaaa gtcttttaat 60
aaacaaattc agagtaaaat taattgaaat atttataata catttgttac acagttattt 120
ccaata 126

<210> 143
<211> 730
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(730)
<223> n = A,T,C or G

<400> 143
gcaagttctg gagtgttcac ttctgagcct gaattccctc ccctgcaaaa tgggggaata 60
ccctcctcag agggtccctg cgagggtgag gggagatcag catggcaggt gtgctgggca 120
cggcagggcc tgggaagggc agatcctttc cccatccctg ccacaaacaa cccaaacctt 180
taaaggagag caatggcctt gtgtcaaaaa caaaaacaaa acaaaaccct gtcctaggag 240
actggggccc taatttctaa tagcaagcct ttatgagtcc ctaacactct actgggctga 300
gtatctcaca cgccagagga taacctgcct tctgctcacc accaccccgt agtagttgtc 360

attgtgtcca tttcacagat gaggcaaagg ctcagaagag tcatgtgtta aaccagcttc 420
tagagcccat gcaggagctg caggtgggga gaatcacctc taggtgctct tcccatggaa 480
tcctcaccct ccttgagtgg tcactcactc anctttccaa tgggtgtgtg acctttgacc 540
agctttcttt ccttntctgg gcctcagttt cccaccttgg acaaagtaag aggtctcttg 600
ggnttcangg tagttcttcc taacttcttt tccttttcat ttgagcatcc ttcttcattt 660
tttgccacct ctcttgtcat tacangcttt taccttcggc cgcgaaccac gcttaagggc 720
naaatttcca 730

<210> 144
<211> 485
<212> DNA
<213> Homo sapien

<400> 144
ctggtcagaa atgattctct tgtgacacca tcgccacaac aggctcgggt ctgtcctccc 60
catatgttac ctgaagatgg agctaccttt cctctgtgtg gcattttgtc gcttatccag 120
tcttctactc gtagggcata ccagcagatc ttggatgtgc tggatgaaaa tcacctgtgt 180
tgcgtggtgg gtctgctgcc gccacttcta atcctcatca tgacaacgtc aggtatggca 240
tttcaaatat agatacaacc attgaaggaa cgtcagatga cctgactgtt gtagatgcag 300
cttcactaag acgacagata atcaaactaa atagacgtct gcaacttctg gaagaggaga 360
acaaagaacg tgctaaaaga gaaatggtca tgtattcaat tactgtagct ttctggctgc 420
ttaatagctg gctctggttt cgccgctaga ggtaacatca gccctcaaaa atattgtctc 480
aacag 485

<210> 145
<211> 465
<212> DNA
<213> Homo sapien

<400> 145
ccaagacagc tcgtttctgg agagtatgag ggtgtgtttt cttattgtga aaggaactac 60
cttctcttag agggtaggaa gaatgtggtg tgtgtgtgtc tcataaagca accggacatt 120
ataggtgccc aggtcatcta taaaaacgat ccttgggctg tgtaaaaatg aagtggcttt 180
tcagtatcct ctttcacact tgctgcttcg ggagactatg caatgatggg aaggtgattg 240
cccctttatt tcattcagtg ccatggtccc tgttgttgta gtaatttatt tgtttagttc 300
attttttttt tcttaacagt caaggggaag agtgattcct cacactgctt tcaagctgga 360
ctgagccagt ctcattctgg gaaagaaatg ctgtgtccag aactcagcag ctccatctat 420
tttttccagt cgaaagaaac tgatctttag gcagttttta cttgg 465

<210> 146
<211> 351
<212> DNA
<213> Homo sapien

<400> 146
ccagccgggg taatctgtat gtggcggact tgagctacga cgtgggcggc aagtgcctgt 60
ttgaccagat cagcggcgtg aagcttatgc caactcatcg tttgataaat ccgaggatca 120
gttcaagacg tcgcagcggg tgattttggg aacgtcgttt tcggtcagta aattgtgggt 180
agcgacggag tggttgatcg gcaagaatga tccgtatatt ggcgggagca gctataccga 240
gagcctgggg gctgggggga gtaaccagtg ggagaatcag ttatatatga acattgggta 300
ctacttctga cttaagatct ccagcgtttt aactggcctt atcgcaggca a 351

<210> 147
<211> 654

<212> DNA
<213> Homo sapien

<400> 147
acttattttt aattactgaa tatttcttag acgttttggg acagatttta tgtaatcttt 60
ataagtatga tttctgaaga aaagcaaatg cattagtatg tttgccttaa acttgtagac 120
taaaccaagt attgtaaaat aaacagcgat aacagtgata gtttttaact ctatggtcat 180
tgtatcactc tggaaaatgt ggagtagctg taataaatct actcctgtat tatgctttac 240
agtgcaggtc ttagtttttc tttttctca tttcttttga aatggcatct cgaacaaagt 300
ccaccaatcc ctttacaaaa gaatgaactg ctcctctgtg tgtacttcat agaaggtgga 360
atcggacaga ggcaggttag tgacagttat tcctgaaata caggagcaga gtacagtctg 420
ttgtggtttc ccggattccg cgcctagctc agccaattaa gcatgagaca taggccattg 480
agccacttag tagttatgcg agtggataga ttggtatgta agagggaaag aggtctgctg 540
taaagaacaa cacttgtttg tctgtgggga aagaaaagca gaatcttgag atgaaagttg 600
gcatacaaat aggatactat cgccagtagg ttatattaca aaacatttat cggg 654

<210> 148
<211> 539
<212> DNA
<213> Homo sapien

<400> 148
tgaatatcat gagggtgatt ttcacctgat tgcaaaactg ccatagtttg aaacactttt 60
tcaatttacc agacacactc tgtcaagact tcatatactt ccaacttgca agcctgtgtt 120
ttgccttctc caacctaaaa aggaaaagct ttaaacgatg aacttacatt ctattaaacc 180
atcagacttg agcttatcca tctgtttagc gtgaatgtac aaaccaggta catttccacc 240
aaacacatag aaaaatcttg tgcatcacag ttcagctaag ggtagtagga caatccttac 300
aatcctcctt ggatttcttt tttaagatgt caaagaagca ggtaagcaac attgttcatt 360
tgttactggg tgttctagat caaaccttca caagctatat atatagcttc atatgctata 420
gcttacaaat ggggtaacaa agtaaaagaa aagaacaaat tatactttga cactttatag 480
tcaaagtata attaaaaaag aaatcctaca gtgggtaatg gagaaataga taatttttc 539

<210> 149
<211> 273
<212> DNA
<213> Homo sapien

<400> 149
tttttggtca ttctcctcaa ggagccgctg gatagtagtc ttgattgact tccaccttgc 60
ccctcataca gtccggtact aaggccaccg acatcccgag gaacctccgg aaccacgacc 120
gccaagcaac tcgacccacg ataggtgggg cctacgctct cgaagttgat tggatgctcc 180
cgcctacagg gcggggtaca gaagggacgt catttgtgac tggacgcgca agagctatac 240
tcagcagctt tcctctgtcc cagcccctag aac 273

<210> 150
<211> 200
<212> DNA
<213> Homo sapien

<400> 150
gtttttacta ccgtatggcc catttaaaag ggatgtgtac gccttacact ataaccctta 60
aaccacctag aaatatgaaa ctcaaactgc cactgacctc cctcaccaag ctccataaaa 120
gtaaaaaatt ataacaaacc ttattaacca aactgaacga acatatgggc gattgattca 180
ttgcccccac aatcctaggg 200

<210> 151
<211> 515
<212> DNA
<213> Homo sapien

<400> 151
ctgtagcgat ctttaagaat attttatata tgaaatctgg atttagggtt cccatggtct 60
ggcaccactg ggtacagtag ttctacatgg cagtaattca ttggagttga agcagtgagg 120
aaagagtcaa gtactagtct tttatcctca gtgtccagtg actgtcaaga gaaatgggac 180
tgccttctgc attgggatat gtgggttaaa gagtagtcca atatagaaga gtgagaaagt 240
gmaccctctg aggcatagta atgttttatt kraaaacatc tcacatgtat tgaatactta 300
sataggatgt attctgtatt actgaatttt ccagattatt gaagcaatca cctttctgtg 360
tttaaagttt tagaaagaat gcttttaaaa atgcttaaca taagataagc ctgttttcat 420
ggtgcaaggt cctttctatg aacatgaatc actggactct gagggttgga ctaagatcac 480
atctacatcc cttttaaatg actagtgtgc tcaga 515

<210> 152
<211> 243
<212> DNA
<213> Homo sapien

<400> 152
atttcaacaa catacttgtc gaggtagtta taaatcttct tagggggagg tggtggtttc 60
tgttggaatg ccaattttac agcttctgct gctgattcag gttctttaat tatgcttttc 120
tttgagtctg cttcagatag cacaacaaaa aaatgatgac acttttcaca cttgacaaaa 180
cgggtggatg atacaaaagg tctctacatg tgtgcacaag tcgccacatt taggacagcg 240
cag 243

<210> 153
<211> 620
<212> DNA
<213> Homo sapien

<400> 153
ttgtcttctc taccttacca tagccagttg ctttcatttt aaaccagagc aagtaacata 60
ttagtgactt gaatcttcat aagttaaagt aaaaaacagc aaaaaaccta gatctttgtc 120
ttttagaaca cagaccattt tcaggaaagc agttagctaa gtgtttaatt catgaatatt 180
gtatactgca tcccctacca caatttacac aatcctgtgg atagtcctac ctcaccctgg 240
tcaacctaca tgatccttaa gctaatggcg gatcacgatg accttgtaga catgcacaca 300
actatacctt tgtccaacag atcataatat atctgctatc caactggttt tacctgccta 360
atcctactga tttgggcact gcttgtatag tctctcaagt tcacaggaaa tgttgatttt 420
ctaaggtcct catttttaca gagtatacag gcaaagtgac aggggaaaag gaattagtct 480
aagagtaagg ggatgattat tatattgagg ctaaaaccac aaagtggctc aggctttaaa 540
aaaaaacact gtggataatg acaaaaagca taagtaaaaa tattttgaga aaaataaagt 600
acaagttttg aacacccccc 620

<210> 154
<211> 843
<212> DNA
<213> Homo sapien

<400> 154
cattgttagt gacccaagta aatttatagt ttttaagttc agaggaaaaa taaagcctat 60

tttttgttaa cagtcttaat aaataataaa atggaataaa gaaaccaaaa aaaaaagaaa 120
aagtttgtat gaaaattcat ccctatttct ttattttgga ctaagtagtc aaatttctac 180
tatattaata ttatgtaagc gacacccatt taaattcact ctctttgata gaaaggtgag 240
ttgattatca cacctgctat tttttcactg ccaaaragac tgcaataacc tccctccatc 300
accctcaaaa aacaaacaga aaccatctga ggcatagcca ttgtttacat attgtgtttg 360
tgtgcaccta tctacaacgt tctttcttct aaggagttta tctgccaata ttttcggctt 420
cagcagcagc gctcttcttg acagactaag agaaggatct acagaaaagt catctgatta 480
aggttttggg tcaaattaaa actctctgga cagaatcctc tttccttcac ttggatttct 540
gcaaacagaa agcagattat tctcctggca caatagcgac tctagaaacg cttatgtttt 600
tcagactttg gcagaacttg ttaagaacag catcatcata atacatttgt acaaactcga 660
atttcagtgg ctcttttgtc ccacatgatg catgatgaaa tttataaagg tctgttttac 720
ccccacaggg tcatttcttt tgtgttccta cagagccaat aggcttcatt taagtccaag 780
ttattatatt aaccatccct ttcactagac tagagaactt ctttttcatg gtccatatcg 840
tga 843

<210> 155
<211> 674
<212> DNA
<213> Homo sapien

<400> 155
tttcgtgtca gccccaggtt tgctccagct attcacaagc agaatataac acaagaaaaa 60
caattcatat cccttaggga aaaaagagga tcaattcatc actcaatatt taatacagcc 120
aaaatgagct gccaaaacaa gcacacacac aaatactgtg aacagaaaaa tacaagaaaa 180
tgactaagct gggagtcttg acggggtatg gacattgctt aaagcactta tcagtcccca 240
gaaaaaccaa accaaaaaca ttttttacga tggcatggcc tcatggcccc ctttaaaact 300
gttgatggta acaaagggca gggggtgggg agagaaaaca caatcactgc tccctttttg 360
ctcgccagtg tgactgcacc cctcacggca ccggcatgta cacaactacc acacaaggag 420
gaccaagtcc ctctgctggt ggcctcctaa aaggcaaggc ttgagttttg gctgatgagc 480
aagttctctc cgttaccaat ccctgccaac cagcactacc atggctgaat tgatctaccg 540
ttttcctgag taaactgtaa ctggctacag tttcggtaac atggaaaaga actcagctac 600
tacagccaac tgcaatactt caggaacccc ctccatccct ggggctcctc actcctagtg 660
catcttgatt ggat 674

<210> 156
<211> 671
<212> DNA
<213> Homo sapien

<400> 156
cctttagtga acacctttat ctccatgtcc ctcttagagc ccagagagct gcccataggc 60
attttccaga attcctcatg tcacctagtt caatttccat taactcagat cagccattgt 120
gattcaccat ttgtcaggct ctcaggttta acaaaaccta ctatcaccat catccttcaa 180
cagccacagt ctgaattgag ccaacatttt tttttctttg agaaagaagt gggctggggc 240
acaactttta gtctgagggg agctagtagt cggcttgaca attaaagcca tccataacaa 300
cttttcctca aatgtgttga ctcctcaggg gctaaactgc tcttagctta gaattatgct 360
ttactagaga tctaccatat aagtgggtta atcactacca tcctgtaact agttatatag 420
cttccagaca tgagggagac atcaaacagg gatggaagca accccaagga tatgcaagaa 480
gggcatgatg aaccccccttc cctctggcag gagaacaagg ccaaccaagg gacagactgg 540
aaagcactta gatgtttaag gaggagaaag gggaagcttt gaccagtcct tgccttttgc 600
caagttcagc cagttctccg ctgcttgcaa cctctagcgc agtaacattt tgcagaattg 660
cagattttcc c 671

<210> 157

<211> 474
<212> DNA
<213> Homo sapien

<400> 157
cgcgttcttt aattctttaa gcctagaaag tcctttacac tacttaccta aaggtcccaa 60
agtaaaacac acactagtag taaggctagt gcatttccct tctagcactc aaagaaagct 120
taacattttt gacagtttgc aaataccgcc ttgtatttct gattcagcct tattcaaagt 180
atcataataa aatatttatt aaatstatgt tgatctgcgt gcatttatga tctccagatt 240
aacgttaggc ttctctgttg ggccctaact tggaggtgct tttttggatc cctcctcccg 300
tgattcattg taatttcatt tcccttgtca tggctctgac cagagaagat tctaaatatc 360
tgcccccaaa gccaaaatta tatcttttga aaagtgaaat gaagagttga gtcastaatt 420
tattttagat attactgcct aaaacaattc cccaaaattt atggaagttg gagg 474

<210> 158
<211> 584
<212> DNA
<213> Homo sapien

<400> 158
ttggattctg cagttccaca tcattcactc cggcaaagga gagaacttgt aacaaagatg 60
agtgccaagt ttagtcaatt taccctacct ggaatactat atacaactct gggtctcatg 120
tgtgttaaaa tacatacagt gaagctgagg aagagccact gaagtaaaaa gtattgttta 180
caagttggaa aggatgtaaa aataatctaa agtatactaa gtcaggaata aaaggcagag 240
ttaataaaat tgtggctggt actgatagac gaaacagata tattttctaa atcctggaat 300
aattattaaa aaatttttaca tgtatcaatg gattccagac tccatatttt aagtttcaca 360
actactgtca tttaaaacta taccttattg aacgtctccc actctcaata aattacccca 420
aatcactctt ctccaaaacg taaatttgga acacactgac ttacaaattt tgggcttaat 480
ttataggatg ttgtggccct caaaaatatc attgtgggct aaacaaaata aattcttgaa 540
acaattctaa aaatcaatca ttgtccaaaa tgaacttttt ctaa 584

<210> 159
<211> 671
<212> DNA
<213> Homo sapien

<400> 159
cctaatttta ttacttttct tgccactgct attattgata gaaatacaat taaataatta 60
agatgaacca atccattgga agattactaa aattgtatct tcccaatgcc tcctacagta 120
agatttcttt ataattataa cccttggaga caatttgaac tttatttaaa tgttctgctc 180
aaatctaaat ttccttctcc taggctgaag cctgatctaa ataaggaagt agttgggata 240
tatccacagg ctgtcgaaca tggagctgca tctgagagac aggtggcagc aaccaaaagc 300
aaagcaggga ctgagaacag gcaggttcca agagcaaaat ggaacttgaa agccaagtat 360
ggttcactgt aaaggagaaa atatagaaat acggaactag aacacctggt ctgggatgtg 420
gtaagcaccc aaaatatagg aaaactgtat gaattcttgt gaagcagtaa actatgatag 480
taatcatgtg acacatatga taacaaactc aaaacaggga aaagaggggc tttattcaat 540
gctggagata agtgaaaaaa aaagtgaagt gtctcaagga cagaagttat catctcaaaa 600
aggcatatca gctagatctc gcggaaacca tatgattatc ataattctag actctgttcg 660
gtattacaaa g 671

<210> 160
<211> 315
<212> DNA
<213> Homo sapien

<400> 160
ccagagaggg agggctctgc ttcaccacag ggcaccagaa gaggactggt gcgcgggaag 60
accaggtaat cataatgcta ttaaaaatag cagtaatcat actgttttat acattgtata 120
atgtcataag gattttaact ttcatgtaac ataattgctg taaaagtttc cccagtttgt 180
tttgtgctat ttaccctggt gttaaaatgt gtaagaattt acatttagg tatgttaggt 240
ttattccttt ttatatggtt tctgtttgaa attttgattt tagaagacat tcattctcaa 300
ggtcataaaa cacac 315

<210> 161
<211> 607
<212> DNA
<213> Homo sapien

<400> 161
tttytgtgtc accttggata attgcttaac ttttaaaatt tacgttccct catttccaaa 60
aagggattat aactcactgt tattttgata attgagataa atgtacgtac aagtgctttg 120
aaactgtaaa gtgcattata aacagaggga tttaccatag aggttctacc ttgatgtatc 180
aagagaagcc ttttctggaa tctggtgcag ccttgtgaga tgctgttagg taaggggact 240
ccttggtaga atttcttaca tttgtgtaaa aagttctggt tcctgagtaa ttccaaagaa 300
gatgctatga ggagttcact gtgcctttga tttgatccca atgggtcaga atatgttttc 360
tcattcagta ggctactaca ggatttgaag tagaaaaaac agggtccagt gaccttcacg 420
ggatcctaga tgttcatgaa tttcaatcat ttgagattgt ggggtgtggt ccaatgctgc 480
tctcaaaaag atgttgcctt tcttcasaga gcattaataa ctaaaaaatc ccctggtccc 540
aaatttattg tgtgtmtctg aaggctttaa ctgaagaaat gaaawgcaca ctcatggaac 600
aaactaa 607

<210> 162
<211> 443
<212> DNA
<213> Homo sapien

<400> 162
tgagttttga aaaagtgaat aatcaaaagg aaaataattc cttgttgttc ataaattaag 60
catcactaaa gtctcttgaa aggcatttct gtattgggca agatttaaaa tactaaagcc 120
ttaggtccta ttcatattta aagtagcatg tttgtaacct gttactattt ggagagagaa 180
gcagttgcct gccacaattg aagactacct ttcaaatagc aaaagagaga gagaaggctg 240
atatttcggg cttttaaata aagatttgtg tggttctgct tttactgtaa ctgtcacttt 300
cccagtgaaa atgatttcat atacatttga gggtcttaca sgtatgggta aagttctata 360
aattgcaaca aaatgatacc caatttcatt ttatcctttt tgtattgtga aactggaaac 420
tttatgacat tgtaaattat cag 443

<210> 163
<211> 686
<212> DNA
<213> Homo sapien

<400> 163
caggcaaatt atagtcaaat acatcacccc cctcaggcat ctgtggcaag gcatccctct 60
agagaacaac taattgatta cttgatgctg aaagtggccc accagcctcc atatacacag 120
ccccattgtt ctcctagaca aggccatgaa ctggcaaaac aagagattcg agtgagggtt 180
gaaaaggatc ccagaacttg gatttagcat atcaggtggt gtcgggggta gaggaaaccc 240
attcagacct gatgatgatg taagttagct ttgtatattc ttgaaacacc tataaagttt 300
tatttaccga ttgaatactt aaatgtaagt gaaaatctaa tagatgttta tgtaaatcta 360

ggtagacatc acctggattc cccactctat tgcttacctt tttgttttgt aatttgatca 420
gttcaagtta aaacaattta accaaaaact atgaatgttt atgatataat gaaatgattg 480
ttaactttct tattgctttt tcacacacct ataaaagtaa ttttattact cccaagagaa 540
atcactaaag gcagaattac tagaggtaaa aataactagg gttggtacag tattactcag 600
gagaagtcaa ggggagaaaa cttgtcccaa tgattcaaaa taattttggc atgggggggg 660
ggagggaaaa aaatttggct tccttt 686

<210> 164
<211> 706
<212> DNA
<213> Homo sapien

<400> 164
tttttttgt ttcatttgct gcttaaaata aaaattataa attagattta aatggagcac 60
taattataaa acagattgca agtaccacca tttgaaaaaa aaaaaaaaaa tcagtggatt 120
tccataacac agaaaatgca tggacatgca tctacagtag agttaaaaat ttcctgtgac 180
taaaaaatta aaaactggaa tcaccagtag caaatgtata gtcaatggct atgacaagaa 240
cagatcctgc cgagctcata aatgcaatta ttggcttttt tgctttataa aaaagacatt 300
acatatttta ttgcattatt ctcctaataa aaaacatact accacgtagc tctccccatc 360
cccattcttt gcttccagat ttttatagaa aataactgtt ttagtctggc cttggaaagt 420
gaacccacca gcaccacctt cacctactca ctcttcaatt caatatgcac atagcaaaag 480
ccaacacttc aaatctcttg cccacatcaa aaaaagtagt ttcaggagaa aaacattaat 540
accagttgaa taaaaataag ggcataaaag ctatgagaga gatagctctg ccatctgtct 600
ctgggctaaa aatcaaggct aactattgcc tttggcacca caaggttcaa ggtccatggt 660
tttattagaa aagtccccac aaaaaaatta aaccccccctc acccca 706

<210> 165
<211> 427
<212> DNA
<213> Homo sapien

<400> 165
tyywgggcaa ttaggcagga gaaggaaata aagggtattc aattaggaaa agaggaagtc 60
aaattgtccc tgtttgcaga cgacatgatt gtatatctag aaaaccccat tgtctcagcc 120
caaaatctcc ttaagctgat aagcaacttc agcaamgtct caggatacaa aatcaatgta 180
caaaaatcac aagcattctt atacaccaat aacagacaaa cagagagcca aaatcatgag 240
tgaactccca ttcacaactg cttcaaagag aataaaatac ctaggaatcc aacttacaag 300
ggatgtgaag gacctcttca aggagaacta caaaccactg ctcaaggaaa taaaagagga 360
tacaaacaaa tggaagaaca ttccatgctc atgggtagga agaatcaata tggtgaaaat 420
ggaaaaa 427

<210> 166
<211> 124
<212> DNA
<213> Homo sapien

<400> 166
accatgtttt cgttgtgtgt gagcagggaa gggaactttc ctgccttatt taaacctggg 60
ccgaggattc gtggaatctg cttgatcaga gactctgagg ccaaaaacgc atcatacttc 120
ttgg 124

<210> 167
<211> 232
<212> DNA

<213> Homo sapien

<400> 167
tctgcatagc aaatatgatt taagaattta acatcattat ttgatcacaa gcgtaaatat 60
gtcaccataa ataaatgtaa attcattgta caaaaattcc caacaactct taatacaaat 120
atggtacatt tgacagtttc tgaaacagat tatttttaaa actttttaaa acctaagctt 180
tatttttttc ctggttatta gacacacaca aaaaaaataa aaagaggctg gg 232

<210> 168
<211> 677
<212> DNA
<213> Homo sapien

<400> 168
tttcacaatt aaccaacatg caaaaattct cagactaaac actgagaaat tcttcataca 60
atgcatttgc caccttattg catttttaaa atctttattc tatagtgaat tggtattccc 120
aatctgccta agcaaaggca tgcccttcta acaagatttg cttagagcag aggtgataga 180
aggaagaatc cgaagaccct ctggcatggc aatctgggag cagcacattg ttgatggagt 240
ccaagtgagc acatttcaca caattcattt agtgacaagt gggcttgctc ccttttcatc 300
caggaaaaaa actactcaca gaccactgcc cagaatctgg aataagaacc ctcattttaa 360
ggtattcttc ccaacaaata aatatctaaa tattgaaagg gggcatatca gaaaacttaa 420
aagacacaat aaccaaaacc aaaaccctct tcaaaacaag taagcaatgt ctgtatttag 480
ttcactctaa aacattctta gcttttcttg cagtttgttc ctaaaagatt tgattgggca 540
caagaggaac gaaattatta ataaaataaa agcttatttt tgtttttgct gtggataatc 600
ggtacaaaac gtttccagat ctgagactta aatggatctt ttaaggtgaa aaggagaatg 660
ccaggttcta ctgaaat 677

<210> 169
<211> 635
<212> DNA
<213> Homo sapien

<400> 169
ttaagaagac tgggcattta tactctctct tgctagtcag cctggagcaa gcttggagca 60
gacgcacatt tttgtactgg cacatattct tagacgacca attatagttt atggagtaaa 120
atattacaag agtttccggg gagaaacttt aggatatact cggtttcaag gtgtttatct 180
gcctttgttg tgggaacaga gtttttgttg gaaaagtccg attgctctgg gttatacgag 240
gggccacttc tctgctttgg ttgccatgga aaatgatggc tatggcaacc gaggtgctgg 300
tgctaatctc aataccgatg atgatgtcac catcacattt ttgcctctgg ttgacagtga 360
aaggaagcta ctccatgtgc acttcctttc tgctcaggag ctaggtaatg aggaacagca 420
agaaaaactg ctcagggagt ggctggactg ctgtgtgacg gagggggggag ttctggttgc 480
catgcagaaa gagttctcgg cgggcgaaat cacccccctgg tcactcacat ggtacaaaaa 540
tggctttgac ccgctaccga cagatccggc cgggtacatc cctgtctgat ggagaggaag 600
atgaggatga tgaagatgaa tgaaaaaaaa aaaaa 635

<210> 170
<211> 533
<212> DNA
<213> Homo sapien

<400> 170
ctgtgatctc acaagtgtga aaaatcttat gaatgtaaaa tgtgtggaga ttcttctttg 60
tttttagctt ccactttggg aacatgtcaa agcacacatt gagaagtccc atgagtgaaa 120
gagatgttgg aaagcccttg aacttggtcg ttaggaaaca tccacactga agaggaacct 180

gactgtatgg aaggtcaaaa aggctgtatt aatttacatg caaaaagtca cactagagga 240
atgccatatc agaatgcttt tggtaaatat acatgtttta aagaggttat atatcattaa 300
taaaaatatc tagctggtct gaagaccctg agttatctca attgttcacg gttacagatg 360
gaactcttta ttattgagga gttccactct ttcccccatt tgtcactact acacttccct 420
agtctttaaa acaattttag gctgggtgca gtggctcatt cctgtaatcc cagcactttg 480
aaaggccgaa gcgagtggat catttgaggt caggagttcg agaccagcct gga 533

<210> 171
<211> 568
<212> DNA
<213> Homo sapien

<400> 171
cccttgscaa actttccctt aagtattgca ctacaagtct aagacacttt tcactcaaag 60
ttccttcctt ccttacctct cttttaactt ggagtcagac tttcatcagt ctgacaactt 120
ctccctgtct ccttcctttt ccccccttca caagcatttc acctaacaaa tttcttatgt 180
gcttaatccc ctcttagaag cagatgccaa gatgggatta agcacataag aggtcctgga 240
ctaatacaat gacaaaggct ccccttgaag catcacacta aaaggaaaaa aaaaaaaaaa 300
acctagccat tttacattaa ctatttctaa aatatagtat ttgcttccct atttgctaaa 360
acaaaatata ctaaacatga ctattccaaa aatctgtagg gtactaagaa tatgaagaga 420
ttcactctac ttcaggggat ggagttgtag tagaaaaggc tttgtggagg gagggtggtg 480
tttgaaatgt actttaaaag ccatcctcaa agcctcgagg gctatacctg gcctggtgat 540
tatccaagga cagtccattc aaacaggg 568

<210> 172
<211> 167
<212> DNA
<213> Homo sapien

<400> 172
ccatttacag gaatcagcca cttcagttca gacagcttta ttaaaccgcc tggagcgaat 60
tttcgaagca tgttttcctt ccatacttgt ccctgatgct gaagaggaag ttacttccct 120
gaggcacttg ctggaaacaa gcactttgcc aataaaaacg agagagg 167

<210> 173
<211> 391
<212> DNA
<213> Homo sapien

<400> 173
cctcccaaag tgctgggatt acaggcatga mccmccmcgc cctgatgata gacacgtttt 60
taacttctaa aaatatatga tcatgattgt gtctgtggag acttgcacat atactaaatt 120
ttaamcaatt agagatattt gttcattacc acattttggg agtcattatt tcctctatga 180
agagagaaag gaatttgata caagttcaca ggggcttcca gtagattgag acttttattt 240
ctagctgagc tgctgatgta tgaatttttt ttgktattat gactttcata tgtattaaaa 300
ataaaatgaa aaaacaaggg attaggtgag gaacctatac gtctctaata tgcaaaatac 360
cacagaaata atgactgktg ggaaaattag g 391

<210> 174
<211> 474
<212> DNA
<213> Homo sapien

<400> 174

gaactcagag agaggattgt caccсttggc atctgagctg acactataag gacaatgagg 60
agtctccttg gggatagatg gggagatgga aggacgatgc ctgtcctacg gggtcttgga 120
aggttaggga tacacactgt gagctgccac aggctcaaca gtacggatag ggggtgctgg 180
aaccagccag ggctctgatc accaagctat gtgccccatg cagaggaagg ggtagtggca 240
cactgaacca cccagccaca aggctatctc cccatacagg gcacctttaa aaaaattatc 300
cttacagggg aagacgggga ggaaggatga actgtgtgcg gtgatgttgc agtgagtgtg 360
agtttgtgtc cgtccgcttg tatgagggcc taccttttac taactagccc ccaactttca 420
ttatctcccc tttttctgtc tacccttctg cctttttaaa gtggcttgca atcc 474

<210> 175
<211> 655
<212> DNA
<213> Homo sapien

<400> 175
ccttgcaggg gtggggatgt gtgggcttgt tcactgttac agcccatgta tacctgaagg 60
gcaacatgta cccacaaatg ttccaggagg taaataaaaa atacaattca gcctcttcta 120
aaccatcctt gttgatatct ctgctacttc cgaaagttaa ttcgttattt ggactccata 180
atttttccta ttaattcacc ctatgtccaa ctccaacagt gaaaaaaatt tatttaatct 240
ttgcaataag cctataggca ggcagcatta tcctcagtct gcagataagc taaggctcag 300
agaagcttgt atactgtcac ttaggtagta attgcaagag ctggcattca gacccagact 360
gtgggactcc tcactccatt ctctttcccc ccactaggct gctccttaaa atacaatgga 420
tgcttgatga acgcttgtgg gaatcctggg tggacacagt tcctttttcgg ccaaaagcac 480
cttgacgact tgtgaagaat taatctggaa aacttaacct atttataaaa acgtgttatt 540
aagggcaggt tattcccacc ccctttacca aagaaacccg ccctgacctt tttttactgg 600
gggttggtct tgggcatttt caacaagggg ggaacagttt aaaaattccc ccctt 655

<210> 176
<211> 660
<212> DNA
<213> Homo sapien

<400> 176
cctggtcaaa gtgggcatta ccattcaagc attactagac atcaccgtaa cgaaggctct 60
gttcacatga aactacccct tctccattgg gggctcagac tctgctctca tccaggatcc 120
tgaactctgc tccaggcacc tgttcaaccc tctctcccac ccactgcctg tcacttcact 180
gactccagtt acattgaaac aattttcagt ctaagggagg attttctacc tttcagagct 240
gacctccgac tttaagactt gacaggtatt tatcttgaaa ccagagaggg agctggagga 300
aaaaaaaact gagcaagcac atcaatgcct tttccaccct tcttcatcct ttccacactc 360
accgactgcc attaccaaaa cgccaagcac aaccggtttg gaacaagacg cattccgttt 420
taattaaaac caactcatta tgtattttag tggggggggaa gggggcaca atcagggttt 480
tcaccaccaa atttccaca cggtttctga acaccattgc cttttaaaaa actatttttc 540
cacctccaaa atatttattt aaattttatt tattacggag gtggtattct tcctttggga 600
gccaaattgg gaaatttagg gaacctttttt tattacccgg ttttttgggc gggtaaaccc 660

<210> 177
<211> 459
<212> DNA
<213> Homo sapien

<400> 177
ctttttctct tcctctgtgg aatggtgaaa gagagatgcc gtgktttgaa gagtaagatg 60
atgaaatgaw tttttaattc aagaamcatt cagaamcata ggaattaaaa cttagagaaa 120
tgatctaatt tccctgttca cacaaacttt actctttaat ctgatgattg gatattttat 180

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tttagtgaaa catcatcttg ttagctaact ttaaaaaatg gatgtagaat gattaaaggt     240
tggtatgatt tttttttaat gtatcagytt gaacctagaa tattgaatta aaatgctgkc     300
tcagtatttt aaaagcaaaa aagggaatgg aggaaaattg catcttagac catttttata     360
tgcagtgtac aatttgctgg gctagaaatg agataaagat tatttatttt tgktcatgyc     420
ttgkactttt ctattaaaat cattttacga aaaaaaaaa                             459
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<210> 178
<211> 720
<212> DNA
<213> Homo sapien

<400> 178

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ctgcaagctc ccactccttc catttatctt aacgcccagg ctgacttcta agctgctttt      60
cactttccta cctccactgc attttcgccc ctgataattt ttgtaagctt acctaagcct     120
cccttctttt gagatcccct tcttaaaagg gtccattcta ttaaccctac cccatatcca     180
gttactttta ctacctgctg atctatcgct accttgtcca attcatggga attacagggt     240
gcactgggac aagagtaaaa tgatccaaca aacataatgt tgcatttaaa aaaataagct     300
aaaagatact gatgactttt tataactaca acatattcgt ttgtgaataa gaacatatat     360
agtaaaaaga tgaaaatgtg aacaggttga ctatttccta aatttatggc agaaggttgt     420
tctggagagg atgggaagaa aaaatgaagg ctggcagtga tgggtgggga aatgcaacct     480
ccaaaattat ctatctatat atttttatta aaaacaccca cagtaattat ggcaaatgtt     540
aatggtttgt ttgttctaag gttttggata catttaagat ctcttgcttt ctgggtacca     600
tttcttttct tttcttttct ttttttttca aattaattcc aaaagactta tatctgctac     660
atgaagaacg aagcaagttc agctctcttg gctgaaatgt tcaaatgctt gagggcaagg     720
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<210> 179
<211> 427
<212> DNA
<213> Homo sapien

<400> 179

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ctgtgaatct gtctggttct gaacttattt tttagttatt ggcaatcttt gtattactat      60
ttcaatctct tcctggttta atctaggagg gttgtatatt tccaggaatt tatccatctc     120
ttgtaagttt tctagtttat gcacataaac gtgttcatag tagccttgaa taatcttttg     180
tatttctgtg atatcagttg taatatctcc catttcattt ctaattgagc ttatttgaaa     240
cttctctctt cttggttaat cttgctaatg gtctatcagt tttatttatc ttttcaaaga     300
accagctttt tgtttcattt atcttttgta ttgtttttgt ttgtctcaat ttcatttagt     360
tctgctctga tcttcgttat ttcttttctt ctcctgggtt tgggtttaga ttgttcttgg     420
tttctct                                                                427
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<210> 180
<211> 728
<212> DNA
<213> Homo sapien

<400> 180

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caaacacaaa agtcactgtg tgtgtgatgc ttctccaatt ccactcatcc tggctgccat      60
tcatgcacta gtgcatgtat gcatttttac attttttaaa ttacaaaaat caacctatta     120
taactgctta gatatatatg aagtaaaaat gaaagttctc cctttacatg acccatcccc     180
catcatttcc ctctttatct tatactgtca gcattcccag cttgtagcac agtgtctggc     240
aatagtaaat cctcaaaaaa tgatcaatga ataatttaat aatgattaat aaataaatta     300
atgatgatgg tgaagataaa ttttagcatt tattgaacgc taactacaaa ccagggagtg     360
tggtaaatat tttataaaaa tcaatgaatg agctaaaatg ccattctatt atttttttgg     420
atacggttta atattttact cataaatatg cttaaagaat attataatta tatgacttag     480
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aatggtaaaa caatatgtac agcagtatcc tattttttag aataaaaata taaatatgtg 540
ctcacatatg tggttggggc atgcctagaa acccgattag aacgggattt tttcttacca 600
ccattttttt tacctgggaa aaatatggga aaattttatt tcccttcttt ttggttctaa 660
aatttatata caggagccta tttggctttg gataaatcat tttaaaaaag gtggtttaaa 720
aaaaaaaa 728

<210> 181
<211> 546
<212> DNA
<213> Homo sapien

<400> 181
acaatccttt ggaagacact actgggcttt gggtgctgct ttttaataat tgagttattt 60
tgagcttgcc aagtaggatc tattgcctgg actaaaattt atttcctaat cttctgatga 120
ccaagaaagg aaaaattaag tttgcagatg ggagatgaaa tatagccagc gaatatgcat 180
actggttctg aatgaaagga attaactttt cagtcaagaa acagtctgca tgccgtaaat 240
tgaatttttc ctgcaactgg aatgattggt taattctttt tgaacactgg cctttctccc 300
caagaacact aatgaattgc taatattttt taaagaaaac tggtttttta attaggtaag 360
ctccacttcc tcttattttt taatccctaa agaaaactgt taaaagggaa tggatctatc 420
acgccttttc ttttaaaacc accttttttaa aaaaggattt ttccaacccc caatttgctc 480
ttattttaaa attttgaacg ccaaaagaag ggaaataaaa atttttccct taattttacc 540
ccctta 546

<210> 182
<211> 333
<212> DNA
<213> Homo sapien

<400> 182
ggccactctg actgggtctg ctaattcaca tgctctttgt gacatacggc tctaagaggc 60
agaggctgga agagaagtat gtgggttgtg ggatcaagat acccaagttt cagtcttgac 120
actgctatta cttagtcagg tgaccactgt aacttcatct tgattgagcc tcagatgtct 180
cacctgcaaa atggagtttg aaatttgcta tggttgggtg tcacacggat taaatgaaat 240
aatgcctgtt aagcgcctat ccagcactta ataagatggc cactgcatca taatgctttg 300
ggcacaagta acacaacatc caacccaaag ggg 333

<210> 183
<211> 393
<212> DNA
<213> Homo sapien

<400> 183
ctgaatttct tgggctttat gtggcagtgt ggtaaaaata tatgatcaga tttcactgtt 60
aagaaaattc tttcagcaat acatgtagag tcaagtttct tgcatggata actgaacatg 120
tgggttatga gattttaaaa aatgtctcgt gacaaacttt acggaaatgc aacaatctgg 180
acatctagtt ttgtctgaga gtggcgtgga tatgaagaac tgtgctgttg gtgctgatgc 240
cacactaagt tttggcagtc acactcttgg ttcttcatat ttgaggagat gggatggtga 300
ggaggcctgt tggctttatt ttattacgtg ccaccatcta gaatacagat tcttggatat 360
ttcatcttca caaaggtgaa gctgcaaact cag 393

<210> 184
<211> 700
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(700)
<223> n = A,T,C or G

<400> 184
ccaggscawt gaggaaaagr gaaagaatwt arrggstwtt caaataggaa aaraggaagt 60
ccaaattggt cccntgttkg ccagataacc atgattgkgk atttagaaam ccccatgwty 120
tcagcccaaa atctccttaa gctgattaag camcttcagt aaaktctcag gataaaaaat 180
caatgtgcaa aawtcacaag crttcctatm cgamcaatam cagmcaaaca gagccaawtc 240
atgagtgrac tcttattcac aattgctagt aagagaagaa aatmcctagg aatacaactt 300
mcaagggatg tgaaggwtct cttcaaagaa gaactacaar ccrctgctca aggaaataag 360
agaggmcmca agtaaatggg aaaagcattc tatgctcatg gataggaaga atcaatcccg 420
tgaaaatggk gatactgccc aaaataattt atagattcaa tgctatcccc atcaagctac 480
cattgacttt cttcmcggaa ttnggaaaaa tctactttac acttyatagg graccaaaaa 540
agaagcccwt gtagccaaga caatcctagg caaaaaagac caamcctgga ggcatcacag 600
tmcytgactt cmaactatwc taccaaggny tmcrgkgmcc aaaacagcac ggkacntggt 660
mccaaaccrg acwtwtwgac cmmcagacac agaacmgagg 700

<210> 185
<211> 192
<212> DNA
<213> Homo sapien

<400> 185
ccagyctttc ttttaagtaa gcgctttttc aagctcattg tagctacaaa gtcaataaat 60
tggtctttgt tatttttacc tgaaaaggct gttaaaggtt aaaatgacaa actcaaattc 120
aaagggattg gaggatttgg tgtttatgat ttctcagaac aacaatctag agaccaccag 180
ggtgggtttc ag 192

<210> 186
<211> 688
<212> DNA
<213> Homo sapien

<400> 186
gtgctggaat tcgcccttag cgtggtcgcg gccgaggtgg gatatttctt ctggatagat 60
ttcagatagg tagttccctc aaataagatt atatgggttt gcattttcaa ggcagagttg 120
tatacttcct gctctttatt taaataaaaa aacttgaaaa tctgttctgc ccagtattgt 180
aagcgctcag gtacaaatat gaatgaaaca atctctgcct aagtaacaca agtataggga 240
caagattctc agtaaaattc tcacgtgaaa tttgtaactc actagacact atcaggagat 300
caataattat gtaattaaaa aaaataatta cctgccaaac tgggttcttc tttggcactt 360
ctgcttggtt ttaagacaat tctcacatag aagcttatta ttccccatta gtcattccat 420
agatgtaaaa ctggtagaaa caggacttga attgaacatt ctttacaagt aagttatata 480
gcttctgaaa aaagggcttg aaaaagcatt tttggggact ataagaacct tcaaatgctt 540
tcccctctta acaaacctta aaattatttt gaaaataatt taaggggggct gattttctct 600
tgtcaaaatc ttgaacccca cttaccaggt ggttggtcaa accaaagttc aaaaaaaagc 660
ttctggcctt tcctttatcc cacttgca 688

<210> 187
<211> 779
<212> DNA
<213> Homo sapien

<400> 187
gcaaaaaaca gatacatttt cagtgtttaa aaatgaacaa gtatggaaag gcttatacag 60
taactgaaaa gtctcctttg ggaagccaag gtgggaggat tgcttgaggt caggagttca 120
agaccagccc aagcaacatg gcgagacccc atctctacaa aaaattaaaa aatcagccag 180
gcatggcgga catacttgta gtagtaacta catgggaggc tgaggcggga ggatcacttg 240
agtccgagag tttgaggctg cagtgagccg caacgcgccc tgtactccag cctgggcaac 300
agagcaagat gctgctctaa aagaaatttt cttttaaaga aaaaagtctc cctcatagcc 360
tgttctacaa aagtcctatt tcttcccaca aaaagcctct ggtacctggt gttagttctt 420
ggggtggaag attactttta aaaatagaac tattttttaa gtatatcttt tagggaactt 480
tagttcccga agctttagga aatgggatct tgaaaacaaa agggatttca atacctatga 540
caatgcttaa agaattattg gggcatttat ttttcaatgg agggtccaca aatctttgga 600
aacccttggc caattaccag aagccacttt aatttttgac cgaaaatgtt tttaaaaatt 660
ggcttttgga aaaactgtct ctttccccaa aaatgaaaac cttgaaaaaa aggggaattt 720
ttaaggttgc cccctcatta aattttaacc cctctgaaag aaaaccctct tgtgacagg 779

<210> 188
<211> 394
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(394)
<223> n = A,T,C or G

<400> 188
ggcgamgtct ggycaccatc atgcccttta atcaactcac acctgtttaa agagtgtttc 60
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tttctcgtgg gtctcattat caaaccttta cttatttcgg catatttcct ctgggcttct 180
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tcacctttag agatggagga tggaaggatt ggyaccagaa gagggctaag atacgttytc 300
tgtcttngag ctgaaagcac agyctactct ccttcgtttt gycgatgaga aaagttgagg 360
ccagaaggga ggtgacatgt ttagagtcac ccag 394

<210> 189
<211> 681
<212> DNA
<213> Homo sapien

<400> 189
aagttctgac tttggtctat aaaacagggt tattggctgt ggctgcactc aatatctaaa 60
aagttattag gaagtgcctc gttattgtca ttaaagatat ctaaatatgg tagaccaaag 120
gttgttgaga aacacatatt atggactgag ttctgtttct tctgctgtgg cgcacctaag 180
ctcaagcctt ccttctctcc ctccccttct ggccggcatg gtatctgagc tcacagacag 240
acaaggcatg ttagaatcat cagatcatga gcaccgtgct gggatttagc cctctccaaa 300
gtcaattctt acagtccata ctttgcttaa atcctcagtt gttgaggtct gctctgctgt 360
cagtaatccc agctataaat ttcccccaaa tgtggggcct agataaagta gaaggtggat 420
ggactcagct tattttcatg ggatgacagg aactggaaag agaaagggca ttgaaaataa 480
aaagttattc cagaatagca ttaaccctct tactgttcaa gaattaagaa agcctactta 540
gaaatgaggg ccttgagaat gatacccaaa tattggtctt tctaccaaaa aatggccttt 600
ccaaatatct gctttcctgt tccccaattg gctttttaag tagaattaag ttacctaaaa 660
ctttacctga agggtggttt t 681

<210> 190
<211> 839
<212> DNA
<213> Homo sapien

<400> 190
caaatacatg atttccattg gcatagactc ttctatagtc tctcaggcac accttatgac 60
taataagaac actgtcttct agatataagc caagttttag gagttatctt tgtagtttct 120
gtgttgagac tatgggtctt ccctgtgcaa agacttgatt agcaaatact atttgaaacg 180
atcccaaatt catagtgcag ttgaccaccc ttctgatcaa ggggatctct gtatatccca 240
tgaaagcttc ataggtctca ccctagatta agtgcttcac ttctcaagac agtgaacaga 300
tggaagactt ttgtagttat cattatacaa ctgtgccctg tgtgttttat tatacaacca 360
gagaactgag gcactggctt tacctgtcag ctacgccagg ggtgtgacgt catctttctg 420
acttgatcac acatgccaca ttgcttaata tttcaagctt agactgaaat aatcctgtgg 480
taaaaaattt ttggggggct ggggaggtaa agaacaaggg ggggaacttt ggaatatttt 540
tattcattaa tcatatttcc cgaattgtat tttattttga aatgaccata agggacttaa 600
atacgtattg tggttaaatt aaatggaccc aaatggaggt aagtaaacct aatgggacaa 660
atgaataaaa ggtttatgac tgggagcatt tacccatgaa cctccttaga agctatttaa 720
cctttctttt ggaaagccct gaaggctggg aacttaaatt ttaaagacag tacctatttc 780
cagaatcgct tccaaatggc catgttttaa agggccaaca ttttgggatg gccctgccc 839

<210> 191
<211> 697
<212> DNA
<213> Homo sapien

<400> 191
ccatcctgaa tactgatttt ctaatggaac tctattcaat ggcgattgta aaaccctgag 60
gctccgttac tattatggag catactttca tctcattctc ggctattggg caatatgtat 120
ctcataagat tttatcacat ttcacagatg aactgttaat tgattccatg ggtacgatta 180
ggcgagatcc aagctggagc tgcagctctg agtcccataa attctttgtg cttctgtaaa 240
gaataaatct gtttttaatg caaattaaaa ctactggcag ggaattttgg ctcccagtta 300
ttaaaagact ggaaatgtgt aagtggagaa aggcaataac tgcagtaatc tcttaccgga 360
ctctattata attccaaaca tacataatgg tgagaaaaac cgggaaggga agaatgtggc 420
aatgtccact ctttgcccca aacataaccc ttaatttcca tggcgggccc aaacactggt 480
aaaaaccaaa atggtaccct ctatagcatg caacttttat ttcactccaa acgaaaaatt 540
attttgacta tggcttggga aatccattag tagaagaagt tttataacct ataggaaccc 600
ggccatttca tttctaccaa atcacaggaa ttttagaatg ggcaaggaat ttacaggaag 660
acttgcccaa ttatcttttt ttgggggact aaaccaa 697

<210> 192
<211> 687
<212> DNA
<213> Homo sapien

<400> 192
ctggttacta tagctttgta gtataattta aagtcaggta atgtgattct tccagttttg 60
ttatttctgc ttaggatagc tttggctatt ctggatcgtt tgtggttcca tataaatttt 120
aggatagttt tttgctattt ctgtgaagag tgtcattggt actttgatag ggattgcatt 180
gaatctgaag attgctttgg gtagtatgaa cattttaaca atattgattc ttccgattaa 240
tgaacatgga atgtttttcc tttatttggc gctctcttta atttccttca tcagtggttt 300
ataggtttca ttatagagat ctttccttct tttgggtaat tcctacgtat ttaatttatg 360
tatcgctatt gctaaatgga atgacttttt aaatttcttt ttcacattgc tcctggtggc 420
atattaaaag ctactgatgg atggtgattt tggattctgc cactttactg gaattggtgg 480

atcagttcta atcgttttct tatgcacccc tttacggttt ctacatgtaa gaatatatca 540
ccttcaaaca cggataattt gacttcttcc ccatccaatt gggaggccct ttatatcttc 600
tcttggcctg aaggctctac ttaaaacttc ttatcccttt gttggaataa cagtggggac 660
aaatggacat cccttgtcat ggtccca 687

<210> 193
<211> 493
<212> DNA
<213> Homo sapien

<400> 193
ctgctaaaat gatgttgcta aagcattcct ttttcttttg attaaacttc atgtttacaa 60
aaaaattaat tctagcagaa taacgaatgg ttttgttttc tagttctctg ctgaatgaac 120
agttttgcca attatcttca tagagtagtg atataatgaa tgcaacctca aatgcaaacc 180
aaccaattca cagtccatac cccaatcact tccttcatca gcctcaaaaa tcgctaagtg 240
aaccagtaga atggttttgg agcagtaata ggaaagcaaa tagaaagtca aggggggactt 300
tcaacgccaa caagaccaat tcagatcctg atctgactgg tttctaatac aatctctttc 360
cagagtaatg gagcatgagt ctgccacaca gaactttaga gagagtcctt tatttcaaag 420
actgtaaagt tggaagaatt cattcatctg caaagtcaaa tgtcaaaagt tgtgcttccc 480
actcctcatc agg 493

<210> 194
<211> 424
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(424)
<223> n = A,T,C or G

<400> 194
cyagggcant tnagcangas aaggaaatan mggggattca attagggaac wraggakarw 60
caagttgtcc stgtmtgcag atgmsgtgat tgtatatcta gamcacccca ttgtctcagc 120
ccaaaatctc cytaagttga taagcawctt cagcarmgtc tcasgatscr acmtcwatns 180
gcraaantca cmwgcattct tatacaccaa tawcagacaa acagagagcc aaatcatgag 240
tgaactccca ttcacaattg ctacnmaaga gaataaaata cctaggaatc caacatacaa 300
gggatgtgaa ggacctcttc aaggagaact acmaaccact gctcaaggaa ataaaagagg 360
atmcaamcaa atggaagaac attccatgct catgggtagg aagaatcaat atccgkgaaa 420
atgg 424

<210> 195
<211> 229
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(229)
<223> n = A,T,C or G

<400> 195
tgaacaccct tnggaaggaa cctgctcgna tgtannanaa anggaccgga cagtctgcta 60
aaatcgccct ctttagacgc ggcgcgccgg ggcagagttt ttctctggtg ctttgacctg 120

tatttggttt aatggttttg tcctaatctc ttcaatcaat aaaattgtgc gtatttaact 180
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaa 229

<210> 196
<211> 557
<212> DNA
<213> Homo sapien

<400> 196
gcggtggctc atgcctgtaa tcccaccact ttgggaggct gaggtgggca gatcacttca 60
agttgagagt ttgagaccag cctgggcaac ataacaaagt gagatcttat ctctacaaaa 120
aaattaaaca aacaaaaaaa caaatcaaca ttcatttgca gggctctttg gtcttcttaa 180
agaacaaaca tatgaaataa ataagctgat tcttaaagat aacaaatata atgagctttc 240
tcaactgtaa aagcatctct aagttgttct atcaatgcat atccactcca tgaactaacc 300
tgaagaaagt gttgaccatt ctacccaatt aactgtaaac taagattgct ttaatggttt 360
gcctaaattt gagtaccttt aaatttttgc ttttatcca aattcattct cccttcttca 420
aattaaatag ttttgttaga aatcggataa gcaagatgta ctttttagaa agggcaatag 480
aatcctacaa catgctagaa tttgaaatgt ttttttaaat cagtmmtttc tctatgctag 540
taactaagaa aattata 557

<210> 197
<211> 624
<212> DNA
<213> Homo sapien

<400> 197
ttttactacc tatatttaaa atgatccctg acgcccctca agacaaatat attaattttt 60
ttactttgtg ggatagagat cagaaaaaga gtagagatga aaatactgga gaaacaatgc 120
aggagatatt tatgaggtga gaatgtcaag aaacttgtaa agggagaata ctataatgac 180
ccctgaagag agagctttag accagttgag tattagaggt tgccacgtgg ctattcatcc 240
actaataaat acaagaaatt actaaaatgg aagccactgg aaatatgttt tgaggaaggt 300
gagaatgtgg acctattata aatgggtgaa tatgatttct ttctcattaa gttcataaat 360
aactttcaga catgtaacag tttatgaagt gtgccgtagt catttagtat aagttttata 420
cacaaaagtg tttttactaa gactgtcaca ggttcttttg tgaatcttgt ttgtttttcc 480
tcattgtaaa tactgcaata gaacatttgt gtcttaacat aaggcaataa atgaccttaa 540
gaaccttcac ttttatatag aaagtggagg aaaagttggc agagtaattt gttgattata 600
gataaaagct cttgtagaaa ttgg 624

<210> 198
<211> 175
<212> DNA
<213> Homo sapien

<400> 198
tttttttttt tttttttttt ctaacactta tgcatttatt ttcatgtgta agaagaaaaa 60
cgtaactagc acgtgaacat gactgcatgg atacacggct cagcacgagg ctaaagtcag 120
aagtgagtga aagcaaaacc gcatgttgat ttaagtgaaa taacagaaca gaaaa 175

<210> 199
<211> 871
<212> DNA
<213> Homo sapien

<400> 199

ctgttgatca atgatgagct cccaagagta accagcctct atatagtcag catcactggt 60
ttctcaggaa aagcatcacc attgttcatc ttgctgcaaa atgtatgcac aagtatcttt 120
ttatttttaa aaaagccctg acattttatg actgctgctt ttctaagata ttttcaaata 180
tacagtccat acggttcaga cacaatggac tggggataga gacggctata gtgccgataa 240
tggagaaact agccagagct tcagatattt gttttccagg acatctcaat aattgggtac 300
acctcacaat atgtgagact tgacgtcgag tggcacggca tactctggcg caggcacttg 360
ataaagactg tgtttgcaaa tacttagcct gcacttcaag ataccaggca tctaagcacg 420
tcccagatgg tgacagttaa tcttcaaaaa accctatgtg gaagtattat cattgtcctc 480
attttacaga tgaggaaaaa gagacacagg gatgtcaata tcttcctcaa ggtcacacag 540
caagtaagtg atggaacagt ggctcagcca tgaagctatt gctgttaacc actaggttga 600
tttgccttca ttaatttctt cctaaaactg cacatttccc gttagtccct ctttttggtc 660
tgtcgtttga ctcttggcta ctgcttagag gaagattcat tctattattt tctaacttag 720
taaatatgtg caactccttg ggacatgac caggcaaaag ctggatacag aaatgtatgc 780
ccaaacacca tcccaagtta cccctaacag gtcttttctg gaccctgttt gtaagggggg 840
tatatttgga aaaattttta aaattttctg g 871

<210> 200
<211> 737
<212> DNA
<213> Homo sapien

<400> 200
gacattttga aggtaacagc aatatctgtg tatagatggg gttgtggttt tgttatttat 60
ctgctattgc tgaactatcc tttgtcttga gcgataaaag agaagtaaaa tactaaagaa 120
ctgaactgtc catttctgga ccatgagtaa agatgctggc tgtcaaactt cctgttcata 180
cattagttta tttatagagt gtactctcta tgtaaggtat tgactgataa tgttactttg 240
acttcagata gcttgcagtt taatggagga agaagacaaa catgcaaata actaggtcaa 300
tgaggcatcc tttgtgttcc attggaagct aggctgcttt gtaaccttgt taatttctgt 360
ggttttggag tgcattcatt agcaaataca ccccttgttc ttatccattc tctgcttttt 420
tctttatttg gcatttgatg acatttttc atgtggggaa attgagtcag gtgaggtgga 480
aagaaaataa ggacacgaca ctaaattctt tgatgttttt ccttaaaaaa ttgtttttca 540
agtgctccat aaagggttgt gaagttttaa gagccatagg acttggatta ttgtgaaaga 600
gtgtctctag gggccaggt taaaccattt caaggactct ccttctctca tctcccttgt 660
tccacccagg gtggcgaccc ccaaaaagca caaagcctcc ctttcttcat gggaagggta 720
aggaacggaa gggaacc 737

<210> 201
<211> 493
<212> DNA
<213> Homo sapien

<400> 201
tctagaaatg cagcttttat ttattacccc atttctttca agtccttgga aaataacata 60
ttaagggtac aagaaattaa cacatgatgg aaaagtcatt gtgacgccaa tgaatttcat 120
tgagtataaa ctcatctact tcaaatttat tttataacac aacctaagat actcaagata 180
attatttaat ggttagctct taagttgaat tggtctacat aatgcgtggg aagaaaacca 240
gatttttagc cttcttgcca aatccagacc tctggttgat ttttctttga cagaagatgc 300
aagttatttt ccaatttcac aattaaatgt atttaacatg aacattattt tgctttaaaa 360
actataaaca ttgtaggaga attatagcca gtcttcagtt ataaccactc caccctcctc 420
actttctctc tctctctctc ttttttttt gctatgggat ttaatgggaa aaatatgtaa 480
aaactgtcac taa 493

<210> 202
<211> 283

<212> DNA
<213> Homo sapien

<400> 202
cctttttatc tcagtgacac cgtccgggga cgcaggtggt ggtgactcaa ggctagcctc 60
aaagggcagc cccacctcct catcctggac cacagagacc acctgcttgg cgcgccgtcg 120
cttttccgag agggtggctg actccggggt gctggggctg ggctgccgc ccccgccgct 180
gttgctgtac tcctcgcccc agtcgatggg ggctgccctc ggacagcagg tgcaggttgg 240
gggcactgtt acgcaagacc atgctgcccg gagaggtaga tct 283

<210> 203
<211> 713
<212> DNA
<213> Homo sapien

<400> 203
ctgcttttgc gcaaggtgcc actggacgag cgcatcgtct tctcggggaa cctcttccag 60
caccaggagg acagcaagaa gtggagaaac cgcttcagcc tcgtgcccca caactacggg 120
ctggtgctct acgaaaacaa agcggcctat gagcggcagg tcccaccacg agccgtcatc 180
aacagtgcag gctacaaaat cctcacgtcc gtggaccaat acctggagct cattggcaac 240
tccttaccag ggaccacggc aaagtcgggc agtgccccca tcctcaagtg ccccacacag 300
ttcccgctca tcctctggca tccttatgcg cgtcactact acttctgcat gatgacagaa 360
gccgagcagg acaagtggca ggctgtgctg caggactgca tccggcactg caacaatgga 420
atccctgagg actccaaggt agagggccct gcgttcacag atgccatccg catgtaccga 480
cagtccaagg agctgtacgg cacctgggag atgctgtgtg ggaacgaggt gcagatcctg 540
agcaacctgg tgatggagga gctgggccct gagctgaagg cagagctcgg cccgcggctg 600
aaggggaaac ccgcaggagc ggcaccgcag gtggatccag atcttcggac gccgtgtacc 660
acatggtgta cgagcaggcc aaaggcgcgc cttcgaagga gggggctgtc caa 713

<210> 204
<211> 275
<212> DNA
<213> Homo sapien

<400> 204
gtagacaagt acagcagatc cagacaccag atctagctag gctaaatgta cagtatctaa 60
cttgatctga actgaacctg tattccttga tgatgcctaa aactacatcc atagaattct 120
ggtgaacctg taatacagtt ctgaaagtac agttttatat aataagatgc tgatctcttt 180
attctttcaa gtaagagtgc tagagaacaa attgtgttac ttgccttggg atttattgaa 240
cgtctggaaa atgctgtctt cctagatcca aacag 275

<210> 205
<211> 694
<212> DNA
<213> Homo sapien

<400> 205
ctgttcctgt acatttaact gaaaaaaaag taacttaaaa taatataaaa atagcactca 60
tgtatgtcct acagttatag gtgaaatttg atattgtttg tcttacatag catacctata 120
gacagcttaa gtaaagtgac tgttaagagg gttatgctta ttgatgaact cttgtagttg 180
cttaccagct ctgttagtat agttaaattg atctcagtag cttcaagtat ttataaaatg 240
gttgaagtcc aaatacatgt gataattaca atacactttg aattaatgga gggtgggagg 300
ctagttgaaa tgcattttat ttacccaagg agtatgttaa aatgatagtt ataaatgttg 360
gaagtttaaa gcaagatact cagtttagtt ctttacaaat cataagaaga acaaaattag 420

atgttgacat tgctatttta ggctgtgtgt tttccatatg cttcttgctt tccctgtcac 480
aggtggtggc agcaatattg gtgtgattga ggttatgctg gcaccactcg cacacaggcg 540
cacaatggtg ttagctgggc agaaagagtg gcatctctgg ctaccgggct gggggcgacc 600
tttaccatag gatgaagtaa ccttgcattc ggctgcaagg tgtactgtac cgtacacagg 660
tgctgggtcg atggccactt tctgcttttc tttc 694

<210> 206
<211> 704
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(704)
<223> n = A,T,C or G

<400> 206
tttttttttg gnaaaaacag ggtttcatca tgtttgccag gctagtctca aactgctgac 60
ctcaggggat ttgcccgcct cacccaattc aactttcgta agtcagtatt taccatctaa 120
ctcagtgtcc caaaatttaa aatttccttg cactttacag caaaaataca tattggggct 180
ctactgaagc aatatataca tgtcaaaact aaaaatcaga aaagcaaaag ggtccattca 240
acatatagca gcttatattt aaatatgtac aggtatgtat gttttcacag ttagatcttt 300
aaaaaaattt atatttgata tgttcaaaaa tacttctatt ggctataaat aatattttaa 360
aagctcaact gatcaaaatg cattccaaga acatatcaaa ttaaataaat cttctacgtc 420
tttaaaaaca gataattgaa gtcagtaaag cttgaggttt gtgttaagtg tattctgtca 480
gtccctacta ctagggaagg cagaatcttc taaatacgat acgaaagaaa ctcccaaagc 540
ttggaaggaa tcggcagctc ctgaactttt tgggggggc atccctcttc gggattgaca 600
tgcgacataa atgttgcaag ctaagggacc ccccccgggg gagtgggccc caaaaaaaac 660
cacaccttcc ccgtcaatgg tggtcccccc accaacctta aaaa 704

<210> 207
<211> 225
<212> DNA
<213> Homo sapien

<400> 207
ccattttaac tgtactgcca atagaattct ggaattgtgg aaaattgtat cattgaagtt 60
cagtaggatg tgtggcttaa aaatttatca ggaccacaaa aaagaaaaca aaaatatttg 120
gtactgaggt tcattgccag ggcaggaggt atttccagaa aatactcatg cctgtgttct 180
gttccttgct ttcccaaata ctgcatgtga ctttcctaag cggca 225

<210> 208
<211> 678
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(678)
<223> n = A,T,C or G

<400> 208
cctatatcta tcaaaaaaaa tccagttcct aactaataat ctcccaaaaa gaaagcacca 60
ggaccagatg atataaatgg caaatttttt caatcattta aggacaaaat aataccaatt 120

ctgtatcatt tcttccagaa cacttcctaa ctcatcgtat gaggccagca tcactctaat 180
agcaaaacca gataaagcca ttacaagaga gagtgacaga ccaatgtggt tttattgagg 240
atgcaaacaa aatttaacat aatatttaat agtgaaaaac tggatgctct ttccctaagt 300
tagagattaa ggaaagaatg tccccttcac tactcccata caacacctta ctgaaaattc 360
tagctagctt tataaaataa anaaaaacca naaaataaaa taaaaggtgt acagactgga 420
agatacagtg aaggaggaag aaataaaatt ttctttgcgc ataacatgat tcttctatgt 480
ggaaatcaca gagatttgaa catttttttt ttttgagaca gtttttgctc ttgttgccca 540
ggttggagtg taatggcgcg atctcggctc actgcaacct tcacctcccg aattcaaggt 600
gattctcctg ccctcagcct tcccggagta agcttgggga ttaacagggc atggcacccc 660
ccatgccccc agctaaat 678

<210> 209
<211> 720
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(720)
<223> n = A,T,C or G

<400> 209
attattttga accctagcat ttagaaatga aaaacttttt ataacaatca aatacatgat 60
aaagtatgca aagagtagga aattattctg atgacatatg gagggttaca aaggagaaaa 120
ctttttgcta cctctgataa agaatagact aaattctcca agaccaatct gactggtgtc 180
ataataaaag gaggtacaca cggaagcaca agggatgtgt gcctctggag gaaaggtcag 240
gtgaggactc agtgagaaga caagccaagg agccaggtct tggaagaagt caaccctgtt 300
gacaccttga tcttggacta accctgtgga caccttgatc ttggactttt agcttccaga 360
actgcnagaa aataaatttt tcttgtttaa gccacccana gtgtantgtt ttgttatggc 420
agccctaaca aattaaaatt atattttaac agagaatata aaattctaat ataacatttt 480
acagtaaagc attcatggtc ttttttttct tattaataaa tccatcaaaa cagaaagttt 540
tgcaaaattt taacacattt ctctaccact actgtttcta ctctcttaaa actactccgc 600
aaatataaaa atagaaggcc aaaatgcatc attaaaacga tgtttgggga ctaatggcct 660
taaaattcta ttacacttgg aaatatacaa atattcaaag attatctatt gatcacctca 720

<210> 210
<211> 277
<212> DNA
<213> Homo sapien

<400> 210
tccatgtatt tttatacaga atggaacaat atgtatgtat gcaatyktta cattccacca 60
tgaaataaaa cagtataatg aaaataacaa tagattcaaa caatgatatg ctattttttt 120
ttacctatga cattggcaag gtcttcttaa aaaatctgcg aataaccgat gttggagaga 180
tcatggggaa atagccactc aaatgttact catgagagtg tacatatgtg taacttcact 240
tggagggcaa tttggtgata catttaaaaa gttttgg 277

<210> 211
<211> 715
<212> DNA
<213> Homo sapien

<400> 211
gtggtagaaa tactaatttt gcaattacag aaaaaaacaa atgccattca catggttyct 60

aacaaaaagt gtctgaccac ccccaccccc cacccctcaa aaagccctta aataaagagg 120
aagatcaaaa gaaaacaaaa taattcccga gtttcacctc atacatacaa tatagcacag 180
gaagtggcaa agtttaaaat aatgccttta ctgttaggac tagtatgctg tcaaaagcca 240
caatcctttt gttttagtga gttgattttc aatagaaaaa tacaaatgaa catgtgttta 300
agttccaaca tggattgagc acctctgaat ttagtatcaa atgattaatt ttatttttca 360
gatgtcaaat cttagtataa aattttccat tattttaaac ttcacttgaa tctttaaaaa 420
agctgtctaa attgtactat atgagttcag tttaatcttc tgtaaaatgc taacaaattg 480
aactgtcagc agtcttttaa aaaaaaatgg gggctgggtt atttctagaa gaactctcat 540
taagctttga aaatcagaaa tcagagacaa ataacttcag atatagacta gctccacaag 600
caaatttata caattatctg taacagtcta tacatatatg tgtatatata tataccgtaa 660
ccactttcat aggtaaaaaa tattaacttc atgtcacact atgatcagaa gtata 715

<210> 212
<211> 717
<212> DNA
<213> Homo sapien

<400> 212
agcctccccc aatgccttaa aaggtcacag tagatctcag ctctgaacag aaactcaact 60
gaaactcttc ccacaaccca gcagtagata tattaaaacc tacaattttc agggatacaa 120
ccaatattta attcttttga gggttttgtg tttaatacaa ggacacaaac acacgtataa 180
aatgacgatg tcaatactga ttaaacagaa caacaaaata agaagctcaa attatcatca 240
gctattgtgt atatctgaaa taacaataat gcacttgatt ctgaaagaat gattagagtt 300
cctactctga aaatctaatt gtcttgatgt ggcgaagtga gaagaaagga tgatttttct 360
aatgaaaagc atgtatacgg gtagcccttt gcgagattct gtcaaaaccc tgaattttgc 420
attagctgtt ttaccaccca aacgttttta cccgaggatg tgcagcaatg ggaactctca 480
tacactgctt gtgggaatat aaatcagtat aaccactttg gaaaaccatt taacattgtc 540
aactacagct ctacacacaa gtgctataac cacccattcc actccagggt atacacccta 600
aaaatatgaa gtgcccatgt ctacccaaaa ggccgcctaa aaggaatgct tttgagaagg 660
gttaaccttg ttaattagtg gcaaaactgg gaaaacaacc cccaaatggt cccatcc 717

<210> 213
<211> 599
<212> DNA
<213> Homo sapien

<400> 213
cctgttttgg cgaggcagga gggaagcggg atgggagtgg tggttaggcc aagggtagtt 60
caaagcgatt cagcaggatg atgaccacag gagtgctgga gccgggcctt tcagcccccg 120
tgtggatgat gaccggccat ccaggacatg cgagggcttg ggacagtgga cagccagtgc 180
cacacaagga aggaccgatt aaatgacaca gttaaaggaa tttggcctag ggagtgcaag 240
ccagaaaggt ttggtctttt tatatatgta acattggaaa aaaggaacat ctcctgttcc 300
ctgtattaag ttttgacttt agctcagcaa atgcagtgtt tgtggcagta aatatactct 360
gataacaatg ttctttccca ggaatttaga gttttatgat ggttattgaa aatgtttaca 420
tgacaggctg tcaataatat tttttgcctc taaaaataaa acatacataa agtgtacgga 480
ttttaagtat gcaactcact gaacttttca taccgtaata caccacccta gtaaccctcc 540
cccagttcaa gatgtagact gtttccaata acccctcatc ctgttcctta atagcccccc 599

<210> 214
<211> 789
<212> DNA
<213> Homo sapien

<400> 214

ccttatgaca aaccttgcta tgccaaggat atgcttcact atcttcatct atcaaaacac 60
tatgcatcat agatatctaa ttttttcatc tcttgcatga agtctttcct gatttccctc 120
tgctgaaatt tctctcttca aatgatgtgt ttccatagta ctttgtccct tttcaaagat 180
atatctcaca tcgcatattt taccacagtt agtttcattt cttaactctc acactagatt 240
acaaagtcaa tatagacaaa gaaatgttca accttatata acctcctctg cctatgctgg 300
taaattgcac ctactatgtg ttcaataaga gcttgtcttt ttcaatatac aaaactttgt 360
aaagattaaa gaccttgtag aaagtcaaga ggaagatagc aatttcactt ctaagaactt 420
accctaagga aacattcatg aagagataca aggggttatg tgcatggatg ttcattatca 480
tattattctt cattatgaag attatgatgg taataatgaa aatgattatc ttgtattggg 540
ccttatttga agtcaagcat tgagaatgta ctttatctgc attatctcac tgagttctcg 600
tagcagccct ataaggtaca gactgttatc taagcttaaa aaaataaagt taatgtccaa 660
ggtcaaacaa ctagtaaaag aagggggcta ggaaatttgg aaccccaaaa ggggcaacct 720
ctcaagggct atgaatcctt accattatta taaggaagct tggcccatgg tggcccaaaa 780
aaaaccggg 789

<210> 215
<211> 765
<212> DNA
<213> Homo sapien

<400> 215
ggatgtctga gcaggagaga gaccatgtga aggatggact gaatggagac ttgtatcaaa 60
gagtctgagt atcaaagact tgtattagag agggttgttg tagtaatcta gtcagggtat 120
gagaaatggt ttgtattaga gtgtcaggag tagtcgtggc aaaaatatat agatcaggat 180
gagggatggg cctcatctca caccctgact ccagtcaatg gcagtggctc cctggagtac 240
actactatag gaaggatttt gtaaagtttt gtctggcctc agtggagggt gaggtagggg 300
aggagttcta tgaacagtta gtggtgtctg ccatggttga aacaatggag aagggggaca 360
ccttttctgt gcagatgttg cttctggtag atataatcca caatgtaatg ggagaagtac 420
taagaatcag taaattatgg agggtgtaaa agactactga tatttaagcc tgcggaccgg 480
acttagagaa atgatagtta aaggagaaat atccagcaaa caaagatatg acattgaagt 540
ttgggactgc gattagtacc agagatttgg attggaggtg atttgtatag aatggatagg 600
tgattttact cttgcaattt ggattgaggg gtggggaaaa ccagaaaggg gctgggggt 660
aaattagtag aaggtcacct tgaattcatt gtggtccata tcaatgctga aactgattgg 720
ggaacttttt actcttgagt ccctttgtaa gggaacccca gaaag 765

<210> 216
<211> 780
<212> DNA
<213> Homo sapien

<400> 216
ccttttctg tggcaaatgg aggcttttca ctgcctgtag agacaataca gtaagcatag 60
ttaaggggtg ggtcagaaca tgttaagata acttactgta tatgtattcc cttgtatttt 120
gttaaagctg gaacatttga tatttttcca tttatttatg aaaaaatatg aacctatttt 180
catttgtaca aggtaattgt tttttaaagc aagtcacctt agggtggctt taattgtata 240
agtcaagcac atgtaataaa ttcaaaacct gcagttaaca ggatattaga catcaatcct 300
ggtaaccaaa tattaaagat tctctttaaa aaagactgaa catgtttaca ggtttgaatt 360
aggctaaaag gtcttgcagt ggcttttcat ggcccttcaa attggaatgg aactactgta 420
ctttgccatt tttctataaa tcagtacttt ttttttaatt ttgatataca ttgtgtgaaa 480
aaagaaaatg gctaataaac tgtattaaat cttaaacaat gtataaagat tgcacttagc 540
cagttcaaag tgtatactta ttcataatga attataacag ttatatttct gtgttttctt 600
gtaaatgttt cttttccctt aaatacagat aattcatttg tattgcttat tttattatga 660
gctacaacaa aaggacttca ggaacaagta atgtattagt atggttcaag attgttgata 720
ggaactgtct caaaaggatg gtggttattt taaatataaa tagctaatgg gggtggtaaa 780

<210> 217
<211> 810
<212> DNA
<213> Homo sapien

<400> 217
cttttaggca gcccggcacc ttcatccata ggcagagaga gaactgggtg ttggagactt 60
attcgagggt ataggaaggg ccctgtgaag ttgatttaac ttttggatgt cagactgtga 120
aagctcctga gaaacttggg gtaataggat cttcttttgg ggatgaaaat ggggaaggcg 180
tgaggaccta gactacttct ccctaggtca gaaaaagaga attacccctt gacaaatatg 240
atacctgcta ggtatttccc agggaaattt agggattggc gtctttccct agcatgtgga 300
ggaattggca gacagcttcc taagggcggg gagcgggggc ccaaggctga cactgcttgc 360
atccacgtga ccttaagtta tggcagatga ctctgaaacg gactgaggcc aatgagaaca 420
gatggatgga gcactcaggt tagacttgtt ccttctccta tgctggagga gagggatggt 480
tctctagaat gttggaggtg agttgagagc tcgcctcttg aatgttgaac agtgtactct 540
tctgaaaact gcatattcac tttatgtggt ttcagaatac tgggctcaat actaacataa 600
gaaagacact tcattgagaa attcttaagc ttacagaaaa cctatctctt tgcacattcc 660
acataacccc tagcaaaatg caggttcttc atacttctgt ccttttttcca ttggaagaat 720
tgcttaagga aaaattaatt cctatttatt cccacaaaag gttgggcatt gctttgattt 780
taccccatgg gggaatgtgc ctttgaattt 810

<210> 218
<211> 817
<212> DNA
<213> Homo sapien

<400> 218
ctgctccctt atggaggtct cttcattaat aattattgga tagatagaga aggtgagcct 60
gtggcttcca agtaccggct tttgctgaag gtctacatgg gaagaagagc atcatttgat 120
attcagtaga tctgccacac ccaactggct ccatctcctg gaaaacagca ctcactacaa 180
gcaactgtaa tagcacccag caatgaccac gctgctcctg ctggctcttc cgtacaccag 240
taaatgaact caccaatgta ttgcacacat acatttcaca gtagtacaat aaagccctgt 300
atcaggagtg gtaattcaat gacttgactc tatagtgcac tgcagcttta tgtcatacca 360
acattcaaat attcaaatat ccttccaatc catttggaca aaaatacacc atggctgcca 420
agacacatgt atttttcttt cttccatgga ctcctaaact gctcccacaa tcagcagtgt 480
tcttctctca gaaattatct taagcttctc tactcaatgg gaggtacaca cagagacctg 540
agaatatgca gaggccagaa tctctgtctg tgctagagat caactgtact ctgcccacct 600
ggggaacaca tcctctgggt aaagtactcg gaagtaaatt acattccctg gagacagata 660
cgggctttca ctgcagcctg ttagaaaaca caatgtctgt aagttacctc ataggtcaaa 720
gagttttgga ttatattttt cataatgggg ctatggcctt tttaccctgg ttttaataca 780
gaaccacctg cagaaaggac attgaaatta aaagcca 817

<210> 219
<211> 661
<212> DNA
<213> Homo sapien

<400> 219
ggatgctgag gcaggaggat tgagtcctgg agtttcagga tacagtgagc tatgatcatg 60
ccattgcact ccagcctggg caacagagca agattctgtc tctaagaaaa ggaaaaagaa 120
aatgaataga tagtggtatt agatgttaat gacatcagtt gtttttattc tttattcttt 180
cttagaaaca gattagtttt ctcgaattaa agaactacca tttttctttt ttctacaact 240
ttcaagagct ggtgaagaaa tgatgtttag atttaataga tatagtagca gtcatatatt 300

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aatagaatag aaactgagac tctaggaaaa agatagacat gagataagga gtaggcatgg     360
tagacatttc tagattattt atgaaaatgt tgtagaattc attttttttt ttggtctgac     420
ctttggcaat ggtgctgagg aagggaaagc cagcccatca ggcaaggctc tgttttctgc     480
attttatccc gtttgattct tctcgttagg attggagcaa ataatttcaa tatgttcttc     540
gctgggttta tcatagtgac ccttcattta aagggacttt taacaattga cttaaagaac     600
actgagatgt gatattttat tgggatttga aagttgccat tgggttttac cttccttaat     660
t                                                                     661

      <210> 220
      <211> 792
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(792)
      <223> n = A,T,C or G

      <400> 220
cctcttttta ttcctacaaa taattttcaa gtacacacaa ttgggtaaac aaagaaacaa      60
agccaccaag aatgaaaatc agtaggaata acgaacaaga ctcacagatg tcaaacaagt     120
ctgtgggtct tgcagacttc agatgttgga attattagtc gtggcaagng nncaaaacat     180
tagctattac cattatgttt accaactagt gaagtgaact atgagaggat atattaacca     240
cagaagttaa tagaagaata gactcctgaa aatatctgga tgctacaaac taaaatatag     300
tatataatcc ttcatagagt gtcagtgact tcatatttat aattacattt ttgtatatta     360
gcagtgttct agttcttact gccttatctt taagctgann nnaaataaaa ttatattttg     420
ggattcaaaa acacatagct aatgattact atgtggcagt gttacattac tttatcacat     480
atcattaaca taatctgcat gtgttcaaag agatcttcat acttctttgt agctcccact     540
tctttgtcgt ctttgtagct cccacaacat ctagaacagc acaaccgtat atggagaaaa     600
ctcagtctag tattcgttga atgactaatg gaaaatttag ttnataaaca gaactttctt     660
cattgnacaa attatcttgc agaagaataa tggccttagt ttaaaattat catatttacc     720
catntcncca ngttatttta tctcttttgg ctaanaattt tgaaaacggt accttttacc     780
ctttggcatt tt                                                         792

      <210> 221
      <211> 759
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(759)
      <223> n = A,T,C or G

      <400> 221
cttttctgct gctccgggag gtggagtggc ctggcagagg gcacatggct gccacctgct      60
gcaaggaaaa ttctcagtga agactcctca gtatgaagga gataagcctg cacaatcagt     120
cactgataga tgcttagtgg aaaaacttcc aattcccatt tacagctctc agagctagga     180
ttaaaaactc ctggtcataa actcatgtga tgagaagtta tagcacgccc tcattttcta     240
catanccact tgcatttatg gttggctttt gaacttgcta gaagggaaag aagtgcaaat     300
gtgtcctcct tagagctact ctcctcccct tggtgggttt ccagtttgtg cattgtccag     360
atggcccagg agctgacgat caaagggaag aagtcatgtt tgtcatgaga atgctttgct     420
gcatcaggat tcagtgaagc tgttcaccgc ctggagccca tgcagcctca agaggcagga     480
tggagctcag aaaccatcac tgaggttaga aagtgagcac caaagttgag ggaagcccac     540
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aggagtgagc cgaagtgctc cctttggatt tccaaagtgg gtgctgctgc ttcttccatc     600
agccttgctt ctgaccccaa tgcgttcctg gtgccttctt cttggcattt tgctgtcggg     660
ggcccaagga aaaaaattcc tgcatggcag tggtgaaaaa agatggctgc ctgctgaaac     720
ctgatttggc ctgggtaagc cttttggagc cccggttaa                            759

      <210> 222
      <211> 699
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(699)
      <223> n = A,T,C or G

      <400> 222
ccttntnaag agttggcatt aattcttcac taaatgtagg agtagaattt atcaggtaag      60
ccacactgac ctctggnctt nttnncgccc gatgattttt aattagttga atccctttac     120
ttgttatata tgtattcata tattctgttc cttcttggat ttacttttat gattggtgcc     180
tattgaggta tttatttcta gtttgtggta cttcatgtgt ttaggttttc tagacagtgg     240
acatagaaga ttcaagaagc taaatgtagg agaatgtnta atgtaggana ntgaggcnac     300
natatcatca atgaatgact tgaagtttcc tctgttgtaa agaatgatat taccataact     360
gccatagnta atattgatgg tgtaagtcaa ataanaaggc aggaggaaag ggacatccat     420
cactgaacca canatcagag nctcattgaa gcctttgaga agaatccaca aaattttaca     480
ggataattca tttcctgcga tcaccacnag aagagaaact ggttaaacag acaggtattc     540
cagagtccaa aaatttacat ttggtttcng aaccaaagac ctcagctccc aggccacagc     600
aaaagggggc ttatgaattc cctggcaccc agncccaaga cccaanaacc tcatcttgat     660
tggtttnggg cttgggaaac caaaaaacca atgggtggc                            699

      <210> 223
      <211> 598
      <212> DNA
      <213> Homo sapien

      <400> 223
aaaaagagaa agtttcagat ttgccattca aggcttattt atatatatgt gtgtgtatat      60
aaatacatgc acacacttgc atacatatat atttttggct gggggagtgt gagttttgcc     120
tttctaaggg agggaccgcg caggctcctt tgttctgtat tctggcggag atgggtcctg     180
gccttgtgtc actggcttat ccttaaagat catctcccat cctccccagc gccatctgtg     240
tgcagcaacc agaaagggat gaacttggcc ctcttgcggg cctggacaag gtctcttcct     300
taccctttct gttgccagtc agcaacctgt aactcacatt ctcttcccag tgaatccctg     360
ggagcgcctg accctggtgg gctgttcagc ttcctgctgc tggggccagc aatttttgag     420
gatttatctt taggccaggc ttgcctccgt acttatccct gctctcccat ttctctcttg     480
tttgagagag aatgaggaag caaagagtga gaaagaatag gggctgaaga cgccactccc     540
agatggctct ttctatcctg ctcttctgtt gaaacacacg tgctgtgggc ctcaggcg       598

      <210> 224
      <211> 501
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(501)
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<223> n = A,T,C or G

<400> 224
aaacctttat gatgacttcc ttatgaatta ctgaacgaac actggaatgg gactcaggta 60
tcctgaggac atctctcaac tctggcctta gttccccctc tgtaaaatta gggtgccaac 120
taaatgatct acaaggtccc ttccagcgcc gccattctgt aattacatca tgtgtaactg 180
tattaaacat acacaagtga ctgccaggca tgggaatgta acttccgagt aaatgctttg 240
gtttgttcag aatacactat gaacttcttt ccaaagacgg gttgtggtaa atagtggata 300
ttttgattat aagaaataga gtttccttga agctttagct ggagatacag caatagtgtg 360
gtgttcctac aaatatcaca gtgtattcaa acatattttt ctatcaaaaa tcatttttgt 420
aaaagctgtg tgtttttatc caacttgtga taataaatgt tctttatttt agaacaaana 480
aaaaaaaaaa aaaaaaaaaa a 501

<210> 225
<211> 295
<212> DNA
<213> Homo sapien

<400> 225
cctgtatagg gctcgtttcc ccacacatgc ctatttctga agaggcttct gtcttatttg 60
aaggccagcc cacacccagc tactttaaca ccaggtttat ggaaaatgtc aggaaaaaaa 120
aaaaaaaaaa cacatgcact cacacaatac ccaaacatca raattagaag ggcataaaac 180
agggggcttt ataggctgaa aaatatctta ratttcaraa cagaatacca atcaaatatt 240
gaaaattcct ttgttcaaaa cacaaagatg ttttgttttt aatgggagtt ttttt 295

<210> 226
<211> 372
<212> DNA
<213> Homo sapien

<400> 226
agattcctgg cttagagcat gcgagcattg aaggaccaat agcaaactta tcagtacttg 60
gaacagaaga acttcggcaa cgagaacact atctcaagca gaagagagat aagttgatgt 120
ccatgagaaa ggatatgagg actaaacaga tacaaaatat ggagcagaaa ggaaaaccca 180
ctggggaggt agaggaaatg acagagaaac cagaaatgac agcagaggag aagcaaacat 240
tactaaagag gagattgctt gcagagaaac tcaaagaaga agttattaat aagtaataat 300
taagaacaat ttaacaaaat ggaagttcaa attgtcttaa aaataaatta tttagtccgt 360
atgaaatgaa at 372

<210> 227
<211> 599
<212> DNA
<213> Homo sapien

<400> 227
ggcccccgtc gcgggagccg cttcgggcct tctgggcatg tctgccatat ggctccaggt 60
ttgtttttct ccccggcact ctgacgggga gggctcccgg catctcctgg catccgggta 120
gaggacgcgg aggatgctga gctgctggcg cactgcagca caactagaga tgtacggatg 180
ccccccatctt gatcttacag aatcagaggt acagccgcga gaaagagtca agaacagaca 240
gagtcgcttg aggactcagg agggtgtttg ctgcgttgac aacagactac accctcacag 300
tttgctctgc tcttccaaca ccagtggaag atgatcacat cccagggatc agtgtcgttt 360
agggatgtga ctgtgggctt cactcaagag gagtggcagc atctggaccc tgctcagagg 420
accctgtaca gggatgtgat gctggagaac tacagccacc ttgtctcagt agggtattgc 480
attcctaaac cagaagtgat tctcaagttg gagaaaggcg aggagccatg gatattagag 540

gaaaaatttc caagccagag tcatctggaa ttaattaata ccagtagaaa ctattcaat 599

<210> 228
<211> 343
<212> DNA
<213> Homo sapien

<400> 228
aaagtaaatt gtatgaaaaa ttcatttctt caattgcatt agccacattt tgagtattca 60
tgtggctggt agattctgta ttagcacaaa gatatggaac atttccatca ccacagaaag 120
ttctgttgga cagcactgca ttagaatatt ttcatactgc tcttcctcaa ttaatttttg 180
ttgttaatgt tgatgtcttc attggatggg tcataatgtt ccatgaaacc gctcaagtac 240
acaattgtat gttctttgta tcccttacca caaatatctc gctctgctca tttcttttgc 300
agcttcctat aaagtttgtc ttcctcaaaa aaaaaaaaaa aaa 343

<210> 229
<211> 417
<212> DNA
<213> Homo sapien

<400> 229
ctcaagctgc agtccaccgg gtatggttct ggatggttcc cccaagggag caggtatgta 60
ggaggtgaag aaaactgaga tttcaagtat gggagagttt ttactatctc cattcctgga 120
ttaaaagtgc tgaaaaagtc cacagttaaa cattccttta ttcaccctat ggctcccaag 180
aaaagcattc ttcctctgga gtactggtgt actaagggga caatacacca aatttgttga 240
gtttacaatc aagtctacta aggttggact tccttatcag tttggcagag tcccagggca 300
gaataatcat ccatctacag gtctctgttt cctctccctc cgcagcagtg gagagcatcc 360
cagtgtttgg ggcactgtgt tcctcttcgt ccctgcacca gaccctggaa gccttgg 417

<210> 230
<211> 462
<212> DNA
<213> Homo sapien

<400> 230
gaaataccag aagagaaagt ttcattgtgc aaatctaact tcatggcctc gctggctgta 60
ttccttatat gatgctgaga ccttaatgga cagaatcaag aaacagctac gtgaatggga 120
cgaaaatcta aaagatgatt ctcttccttc aaatccaata gatttttctt acagagtagc 180
tgcttgtctt cctattgatg atgtattgag aattcagctc cttaaaattg gcagtgctat 240
ccagcgactt cgctgtgaat tagacattat gaataaatgt acttcccttt gctgtaaaca 300
atgtcaagaa acagaaataa caaccaaaaa tgaaatattc agtttatcct tatgtgggcc 360
gatggcagct tatgtgaatc ctcatggata tgtgcatgag acacttactg tgtataaggc 420
ttgcaacttg aatctgatag gccggccttc tacagaacac ag 462

<210> 231
<211> 328
<212> DNA
<213> Homo sapien

<400> 231
ctgtgggttt tcctaaacgc ccctcatctg gttgaagccc tagtgtttct ttctcacatc 60
agaggcaaat gcattggggt gggtctggtt tggacaataa atttcctctg gtttggacca 120
agaaaaacag agttctttga ccgctaacat atatgtaaaa agaaagtttg taaaaacaag 180
agttaaaatg cttctaacag tgtggtcatc actgcacagg acactggaat tggcattcgg 240

ggttgtgtct gtccatgtgg tttcgttgta tgtcatgtgc tctcagctca gacagagaca 300
tccaattgac ttctgacttg gggcattt 328

<210> 232
<211> 595
<212> DNA
<213> Homo sapien

<400> 232
cgccaatttt agcaaataag agattgtaaa agaagcagat tgaatgaaga atttttagct 60
gtgcagatag gtgatgttgg gatggaaaat gctaatcaac taccctttct tttatcaagt 120
aattaaaata aatctacata aagaaccaaa aaggctgttt tataaaagtg aaatatccag 180
tatttcagag ggccaggcaa gagcacttca gatgaggcag tcaaaatcat ttttttccag 240
tgaggataga ccacaagtgg gtggtgagac cattgaaagc ctttatcaac tgaagagtcc 300
atttaacagc ataatttgtg ggaagactgg aatagggctg aataaatgtg tttgaatctc 360
taattttata ctttcttttc ctgaggaact tgatttttct gtccctggat cgccttgtca 420
taattgggtc tgttcctttt actaccactc ttgagtccat atatgaaatc attaaagttg 480
gatgatcagt tttttataaa aatatatatt tttgtccaag aaaaaaaaaa gcatacatat 540
gtgattatgg ctaaatcaaa ggtaactgga atgtatatac ttttgctaat gttcc 595

<210> 233
<211> 600
<212> DNA
<213> Homo sapien

<400> 233
atgaaggtaa actctaaaat cttcataggt caacaaagaa aatttatcct tcacacttat 60
ttctagaaag cagcagggct tatttcctag attgcttaca atgaagctag aatatctgcg 120
ataactgtag agtttcaaaa aggatcccta gggctacttc tacgttctcc ttaccagttg 180
agcactctcc ataatttcca gacgggtcat gggggagaat gatagaaatg agcgtgggaa 240
gaaagacaat gaaattagaa atgggtgaga cacatggtgg tagaatgcta agagcaggga 300
tcaggacaat caaccaggtg tctaggaagg gtcaagtcac cagtgtcatc tgctgaccaa 360
tgttaggaag aaataaactc aaaggaaaca ccacattttt ccaattaaac tcaaatctat 420
tgacttgtgg tggttctttg atgttgtggg gactgctata acagaaacca attggatttt 480
caagggcaag aaactttgcc actgaataag atgatgtcat ccttcctgat aacaaatagg 540
aatgggtggt cagctctaaa cagcgtggac tgagggagtt gcttttctac aatattactt 600

<210> 234
<211> 500
<212> DNA
<213> Homo sapien

<400> 234
aaattcctaa ttcttttact atcttctcaa cttttcccaa agataaaata aatttcacat 60
aatttcatgg aggggaaatg gtagttgtaa aaaactacct caagtagcaa tcaccgctgg 120
cagtgttttc tcactttctg ttctgcaatt gcaatcacac ttccaaaaag aaaagcaaat 180
gtttgctaaa ccatagacag acaacctctt tgtgactggt attataaggt ttataatgaa 240
aacttatcaa atataaaagg tgctccctct tgaaaatgtg tattttattt gaagttttga 300
gtaagaggtg agtgtttggc aattttcaac actcccctca aaaatctccc aaagttgcaa 360
aaaagtcagt ttagtaaaat tccaagcact taaatgcttc attgagggcc agttgatata 420
cgcaatgcac taatgtgtaa aaattaaccg aatgcaacta ttttataatg gagagctctt 480
accttttcct tccagttttt 500

<210> 235

<211> 159
<212> DNA
<213> Homo sapien

<400> 235
aaaatttaca gataaaggca gttcaatact gccactgaga agtacatctc ttaacatata 60
caactttcag gccacagttt tgaaggtctg aagtattaag ttggtttgat gaattagtcg 120
gttggcactt acgaacacat ttattgcctt gccatcttt 159

<210> 236
<211> 254
<212> DNA
<213> Homo sapien

<400> 236
aaataagtga ataagcgata tttattatct gcaaggtttt tttgtgtgtg tttttgtttt 60
tattttcaat atgcaagtta ggcttaattt ttttatctaa tgatcatcat gaaatgaata 120
agagggctta agaatttgkc catttgcatt cggaaaagaa tgaccagcaa aaggtttact 180
aatacctctc cctttgggga tttaatgtct ggtgctgccg cctgagtytc aagaattaaa 240
gctgcaagag gact 254

<210> 237
<211> 591
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(591)
<223> n = A,T,C or G

<400> 237
tttttttttt tttttttttt tttttttcta atttttactt tttctcaagt ttaatgtara 60
catacaaraa aacatcaagc aatgtttatt gkgcaattcc aatcattatt tgcaraatct 120
tggtttaaag tcagtytttta tagccatttc aactgcttgg tttaaacaaa aagcaacaat 180
ctggttatyt acctataaat ttcatggtat ttytttaaac actgaagtac taaaagcact 240
gatgatttgt attataattt ttaaaatatt taaaacctac acagatttca taratcattc 300
cttttataaa ataatcaaaa taatttgatt atytggaaaa aaaaattctt gaaacaragc 360
cctttccagg tatyttcaat ctctgtaaaa ccccaaaccc caaacagagt aratgatgaa 420
ataaggattt ctcagttgcc caagactgtc tgaaatttaa ggttgaaaaa tggactggcg 480
tttttcatgt ttcctgngaa ttcanagctt acaggtggca tcaaaactca aatctctggg 540
atggctttac atggctttca ctttgatttg tttcattttc atttgcttct t 591

<210> 238
<211> 252
<212> DNA
<213> Homo sapien

<400> 238
aaatggcttt tgccacatac atagatcttc atgatgtgtg agtgtaattc catgtggata 60
tcagttacca aacattacaa aaaattttat ggcccaaaat gaccaacgaa attgttacaa 120
tagaatttat ccaattttga tctttttata ttcttctacc acacctggaa acagaccaat 180
agacattttg ggttttata ataggaattt gtataaagca ttactctttt tcaataaatt 240
gtttttaat tt 252

<210> 239
<211> 153
<212> DNA
<213> Homo sapien

<400> 239
ccacaataaa gtttacttgt aaaattttag aggccattac tccaattatg ttgcacgtac 60
actcattgta caggcgtgga gactcattgt atgtataaga atattctgac agtgagtgac 120
ccggagtctc tggtgtaccc tcttaccagt cag 153

<210> 240
<211> 382
<212> DNA
<213> Homo sapien

<400> 240
aaaaaaacca tctaaaagtg gtttttaat atatatattt tttccaaagg aagaaatttc 60
ttgcttttac tcagggaaaa aaaaaaatta aggtacattt gagtagaatg atttcatcta 120
aaagagttct ttcaggagac atctgtgatt cactgcattg tttttatttt cttctttttc 180
ctcttctttt ccaacatttc taccattttc ctcttcttgg ttgatatcag gccactttct 240
tttgttgctt tcttactgtc acctgttaaa ccgcgtttct ttgtgttagg ttttgaccgc 300
ttttcttctt tgtgcactgt gtcaccaggc tccttttgc caattttgga ctgttcttta 360
cttacaggag aaggctctgc ag 382

<210> 241
<211> 400
<212> DNA
<213> Homo sapien

<400> 241
ggcatgagcc accgcgcccg gccctatctt ttacttttat aaatagagat gaagtttcac 60
catgttgccc aggctggtat cgagctcctg ggctcaagcg atccccaac cttggccttc 120
caaagtgctg ggattacaag cgcgagccac cgaaattatt cttaactagc aagactaggc 180
tctgacatca catccttata gttacatccc tttaagcagg gttcagccac tcactctgca 240
cctggagaac ttgatggtta tccctcgaag tgacagtcct gcaaatgaca aaaacactcc 300
aaatctatta ggttggtgca aaagtaatta cgctttttgc cactgaaagt aagtcccaca 360
ggaccctgag ggaaatggga gggtggggta tacatagcag 400

<210> 242
<211> 75
<212> DNA
<213> Homo sapien

<400> 242
actcacatat gcagacctga cactcaagag tggctagcta cacagagtcc atctaatttt 60
tgcaacttcc tgtgg 75

<210> 243
<211> 192
<212> DNA
<213> Homo sapien

<400> 243

gctccacatt tgtagcgaac actttgactc caaagagaag gaggaagaca aagacaagaa 60
ggaaaagaaa gacaaggaca agaaggaagc ccctgctgac atgggagcac atcagggagt 120
ggctgttctg ggattgccc ttattgctat gggggaggag attggtgcag agatggcatt 180
acgaaccttt gg 192

<210> 244
<211> 616
<212> DNA
<213> Homo sapien

<400> 244
aattttatag caatatactg accattctaa aaataacaaa atacatgttg ctctcaacta 60
catagttaaa aaaggtagta aattctctta cccaaaatag aggaggggtg ggctagtgag 120
ctgctcaaac atttgtaaca aataaaaatg tatctatata catataatga tcatgttttc 180
atagcctaaa atcaccatac aaaatctaat aataaaattg tgtcgtgttc aggagttggg 240
aagccaacac attaaattaa caaagtattt ttggtatatg taaataatgg gatagaatct 300
ctcgaatcag gattgtccca gaagttctaa ggcagatgtc aatgacatgc acattgtcca 360
tgttcagtaa ttttcaaaga ctagaataaa ctatgtaaac tattcaatac aattcaatat 420
tacttaactg ctaaaaagta cttcaagatc ttgcactgcc ttgagtgagt ataatcaaat 480
tagtaattgg aaaatagctg taatagcagg cactgaagaa ttctgacaaa taccaaataa 540
ctgtttgttt ttaccaaata aactggtaag atgatatcac aaagggtttt aagttatttt 600
gctatacaag gttttt 616

<210> 245
<211> 165
<212> DNA
<213> Homo sapien

<400> 245
ttggaacagt ggattaaaat ccagaagggg aggggtcatg aagaagaaac caggggagta 60
atttcttacc aaacattacc aagaaatatg ccaagtcaca gagcccagat tatggcccgc 120
taccctgaag gttatagaac actcccaaga aacagcaaga caagg 165

<210> 246
<211> 229
<212> DNA
<213> Homo sapien

<400> 246
tgtactggat ccctccaggt gggggcgact ctcacctgac tattacaata gcctcctaag 60
tggtttccct acttgcaacc ttgcccgtat aatatctatc ctccacacag caggcagggc 120
gatcctttaa gaatagaagt tagatcatga aaatgctctg ctctgatccc tgcaaaagct 180
cgccacctcc ttacagtcac cgctgaactc gtagcagagg ttcaggagg 229

<210> 247
<211> 338
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(338)
<223> n = A,T,C or G

<400> 247
ggaaaccgtg tgtacttatc ctggatgatg ccaccagtgc cctggatgca aacagccagt 60
tacaggngga gcagctcctg tacgaaagcc ctgagcggta ctcccgctca gtgcttctca 120
tcacccagca cctcagcctg gtggagcagg ctgaccacat cctctttctg gaaggaggcg 180
ctatccggga ggggggaacc caccancagc tcatggagaa aaaggggtgc tactgggcca 240
tggngcaggc tcctgcagat gctccagaat gaaagccttc tcagacctgc gcactccatc 300
tccctccctt ttcttctctc tgtggtggag aaccacag 338

<210> 248
<211> 177
<212> DNA
<213> Homo sapien

<400> 248
tgaaaacaaa tgaattctca actcctacgg ttcatgtaga gtttagagaa aatttccatc 60
attgtcatca ttgaactgtg aacctgggaa gccagatcat gattaacact gacatcaagt 120
ttcaagttgc agatcaatgc acccagtgtt cagatgaggc aaacttctcc gtgacaa 177

<210> 249
<211> 263
<212> DNA
<213> Homo sapien

<400> 249
aaagtaatga ctttattaat aaatatacat ccatatgatg atgtagatac aaatcatgaa 60
cactactcca ttcccataca cataattgca cacgagtagc tcaagttcat ggacataaaa 120
acatacacag tatctattca gactttttac agcagaggac agcgtgctta ttatcagtta 180
attggtaatt attttctcca aaattacctg tggaaaaaag aaattctgaa aacttaaaag 240
aatcaaagtg atctgattac ttt 263

<210> 250
<211> 333
<212> DNA
<213> Homo sapien

<400> 250
aaaaaaaaca acagcgtaaa tattagccca caagagcagt cctaaacaat cacaattaca 60
ctgtactacc caagaagact gtttattgtg aagcatttac ctttcaaaaa atcattacat 120
ttctatttct tggtggagca gcacattgtg gagtgtgatt cttaattctt cattgagttt 180
gtcaatagga cattgatgct ggataggttg tcttttgttt ttatgcctca gaccatcttg 240
tgagattgtt tgcctatctc ataatacagt tttatgcaga aaggttgaaa ctatgtaaat 300
ggtttttatg gaaattatca gttacaatat ttt 333

<210> 251
<211> 384
<212> DNA
<213> Homo sapien

<400> 251
aaaccatttg tacaaaactt ctataaattt ttctctctct ttctctctta tgtacaaaaa 60
tatcttaata tatccccgaa ctggttagga tagatacaaa tagatttttt ataataaaaa 120
attcacaaaa gattggaagc attctataat gaaaatggta gaaaagacag tgtgagggaa 180
gccatggggt ttgggaatcg ggccctggag gagaagcaga gtttcaaagg gctgagaata 240
gcatagtttc actgtaaacc aatgtctaca gcttattggg gtgggggcta ctgagacgaa 300

agacaccaac tcgtttctag agggctaaga actgcacttt aagaaagggc ggggaggtga 360
agggacccga gcaagaactt tcag 384

<210> 252
<211> 211
<212> DNA
<213> Homo sapien

<400> 252
aaagcagtct gaaaatggga catctgtaga gaaattcatt tccttcttct cctccggatg 60
tggaatggaa gctttgaggg aaggaaaagt aggaaaagag cgggatggga tgggatggga 120
tgggatggga tgggatagga agagaggctg gggaatgggc agagaagggg gtgctgagtg 180
tgctgtgaga tagagcaaga tcacaagaag g 211

<210> 253
<211> 135
<212> DNA
<213> Homo sapien

<400> 253
aaaaattgtt tcttgacaag ctgacttggc acttaagtgc actttttat gaagaaaaag 60
tacaatgaac tgcttttcct caagcaataa ttgtttccaa cttgtctggg aattgtgtgt 120
ctggtaactg gaagg 135

<210> 254
<211> 361
<212> DNA
<213> Homo sapien

<400> 254
cctgtagccc ctgctacacg ggaggctgaa gtgggaggat cacttgaacc aatgagggtg 60
aggttacagt gagcccagat catgccacta ctctacaggc tgggtgataa gagtgagacc 120
ctgtatcaaa aaaaagacaa ggaaaaaaaa aactgggccg tttgtttttg cagaatgtct 180
ctcaatttgg actttttggg caggaataca atacaagtga tacaaatgct tctttaacat 240
tagaacctgt ataaaattac cattacagac cttgctattt tacttatagg taaatcactg 300
tttaccaagg taagtctttt gggaatttcc aaaaatgaag tccatggaca gttaaaaact 360
g 361

<210> 255
<211> 331
<212> DNA
<213> Homo sapien

<400> 255
aaaaaaataa ataatccacc aacgtgattg accttggcga gatcatgttt ctagtctata 60
cctcagtttc cccatctgta aagtgaggat aatgtcccac cccatgtaac tgtggtgagg 120
accaactgca acactgtgcc tgcgagtctc cttggaaaag tgtaaggttc tacacaaatg 180
gaaagtgatc tgatcacact cagtgtcccc agcccagcct ttcagtgccc tggccctggg 240
gtgggggaca atactctcct cacccccttc actagtcttc atgaatagca aggaggccat 300
aacataattt ggtctaaacc ccttcctttt t 331

<210> 256
<211> 186
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(186)
<223> n = A,T,C or G

<400> 256
cctttgggcc cttgcacttt gacctgcaat ggggccacac cagccttgct tgtgtccacc 60
tggaaggact gagggaggtt ggcacgaacc atgcctgggc tcaggccggg cccanagcac 120
ttgaccttgg acgcatctgt cacatcatgc acagggacct tgaaaggact gcctggcact 180
tgatgg 186

<210> 257
<211> 255
<212> DNA
<213> Homo sapien

<400> 257
ctggggtccg tcaccgacct ttggggaact gggctacggg gaccacaagc ccaagtcttc 60
cactgcagcc caggaggtaa agactctgga tggcattttc tcagagcagg tcgccatggg 120
ctactcacac tccttggtga tagcaagaga tgaaagtgag actgagaaag agaagatcaa 180
gaaactgcca gaatacaacc cccgaaccct ctgatgctcc cagagactcc tccgactcca 240
cacctctcgc ggcag 255

<210> 258
<211> 604
<212> DNA
<213> Homo sapien

<400> 258
ctgaatttgc aatggagttt ggtggtgcaa tcggtattga ttagtttggc atagacagat 60
gcagcagttt agagcaaaat cgagaaaatg attttttttt tcctccttga tttcctggca 120
gaagatatct tactttttca gcaaactttt cttttaacac taaagcagcc tagggcaatg 180
ccagatactt agagcttttc tcttgattat aagtagaaat gggggtgtct gggctagagg 240
tggagggtgg atgtgctgtc gtcacagtct agctggcagc aagcaaggca aaagcagaga 300
ctgctctaga agcggttcca agcagcagag acgtcaggaa aggcacttct tagtaccaac 360
ctctatgctt taatagttgc ttgttaagct gcttcatggg ttgagacaaa ctaccagcac 420
ttcaaagagc tcagttctct gctcaactct cttctctagt tacattattt tttttccttc 480
aggagactga ggcaggaaaa tcgcttgaac tcaggaggtc gaggccgcag tgagccaaga 540
tcacaccacc gcactccagc ctgggccttg caaagtgcta ggattacagg aatgagccac 600
cagg 604

<210> 259
<211> 429
<212> DNA
<213> Homo sapien

<400> 259
aaaaatgtct gtatcgagat cttccagttt gaagtcttcc tcctctgtgt cttcccaagg 60
ctctgtggca agctccactg gttctcccgc ttccatcaga accactgact tccacaatcc 120
tggctatccc aagtacctgg gcacccccca cctggaactg tacttgagtg actcacttag 180
aaacttgaac aaagagcggc aattccactt cgctggtatc aggtcccggc tcaaccacat 240
gctggctatg ctgtcaagga gaacactctt tactgaaaac caccttggcc ttcattctgg 300

caatttcagc agagttaatt tgcttgctgt tagagatgta gcactttatc cttcctatca 360
gtaactgctc cgtgttcaga ctcctggttt cttccaggct tacagtggac atcatcagct 420
tcctgcttt 429

<210> 260
<211> 385
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(385)
<223> n = A,T,C or G

<400> 260
ctgcaacaca tgcagcacca gtctcagcct tctcctcggc agcactcccc tgtcgcctct 60
cagataacat cccccatccc tgccatcggg agccccccagc cagcctctca gcagcaccag 120
tcgcaaatac agtctcagac acagactcaa gtattatcgc aggtcagtat tttctgaana 180
cgcatatggc agacggattt gcgtatacca aggagagtgg cataggaggg aaaagcatat 240
gtggctgaaa cctgtaagtt ggtgttggtt atgcagaaat gtgtaacaga tcaaacggtc 300
ctctcaagtg tctattanat aggcaataag aactgcagtg tagctgagta acatctttta 360
gctgactata aatcactttg ttttt 385

<210> 261
<211> 230
<212> DNA
<213> Homo sapien

<400> 261
ctgtactgga tccctccagg tggggggcgac tctcacctga ctattacaat agcctcctaa 60
gtggtttccc tacttgcaac cttgcccgta taatatctat cctccacaca gcaggcaggg 120
cgatccttta agaatagaag ttagatcatg aaaatgctct gctctgatcc ctgcaaaagc 180
tcgccacctc cttacagtca ccgctgaact cgtagcagag gttcaggagg 230

<210> 262
<211> 198
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(198)
<223> n = A,T,C or G

<400> 262
atgttaagta aacatgaaat ctatataaca gaacaaaaat tcactcttat gtcaatgtca 60
gcgtgttaat gtagatctat ttactganac agactctgta gtggcagaga gtggccttgt 120
taagccagga ccctgttctg caggctgtgg gtagaagcta ggaagtccct ggagtttcac 180
ccagcttttc catgaatg 198

<210> 263
<211> 157
<212> DNA
<213> Homo sapien

<400> 263
aaaatatatt tctaaacaga atgggccgac tcagtcacag taactgttga tctccatagt 60
agagcaaccc acaaagacag aactgatttt tttcccataa tcaggggtga aaaatataca 120
acttgtttct gaaccaaaac cacaatttct gcagttt 157

<210> 264
<211> 290
<212> DNA
<213> Homo sapien

<400> 264
ctggctactc caagaccctg gcatgaggct gaggacaact tacaagggct tcaccgaagc 60
agtggacctt tattttgacc acctgatgtc cagggtggtg ccactccagt acaagcgtgg 120
gggacctatc attgccgtgc aggtggagaa tgaatatggt tcctataata aagaccccgc 180
atacatgccc tacgtcaaga aggcactgga ggaccgtggc attgtggaac tgctcctgac 240
ttcagacaac aaggatgggc tgagcaaggg gattgtccag ggagtcttgg 290

<210> 265
<211> 234
<212> DNA
<213> Homo sapien

<400> 265
aaaaaaagga aaggaaagag aggaaaagaa aataaaataa gacgatttat tgcttctcct 60
cagcatcctc cttggtctcc tccttcaccg agagagcttc tagcttttcc gccacttttt 120
cggcatgatc atttttgcct gatcctttct tttctctctc ttcgatctct ttcctgcatt 180
cttcaaactt tgttttgaat ttctgtgcat tctcagcatt caggaagcgg atgg 234

<210> 266
<211> 335
<212> DNA
<213> Homo sapien

<400> 266
gtcctcatca tcccagtttg aggcagtgct ggagtgggga aggccgtctt agaccataga 60
ggttggaaga cgctgagaga tcatccagcc cagccccttg atgttacaga gcagaagaca 120
gatgcccaaa caggagaagg cacttgccca cggtcatacg gcaggttgcc acaaaaccaa 180
gatggcagcc cttcctcagc gtgcctcact gccactccca gagccaggga gccccataaa 240
acccacatca tgtcttaaga gtatatctgg ctccttgacc agcaatcggc cctgggagcc 300
accaggtggg aaaagcgcct ctgccagagt ccagg 335

<210> 267
<211> 619
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(619)
<223> n = A,T,C or G

<400> 267
tggagctctg acgaagggat cggggaggtg ctggagaagg aagactgcat gcaggccctg 60

agcggccana tcttcatggg catggngtcc tcccagtacc aggcccggct ggacatcgng 120
cgcctcattg atgggcttgt caacgcctgc atccgctttg tctacttctc tttggaggat 180
gagctcaaaa gcaaggtgtt tgcanaaaaa atgggcctgg agacaggctg gaactgccac 240
atctccctca cacccaatgg tgacatgcct ggctccgaga tccccccctc cagccccagc 300
cacgcaggct ccctgcatga tgacctgaat caggtgtccc gagatgatgc anaagggctc 360
ctcctcatgg aggaggaggg ccactcggac ctcatcagct tccagcctac ggacagcgac 420
atccccagct tcctggagga ctccaaccgg gccaagctgc cccggggtat ccaccaagtg 480
cggccccacc tgcagaacat tgacaacgtg cccctgctag tgccccttt caccgactgc 540
accccanaga ccatgtgtga gatgataaag atcatgcaan agtacgggga ggtgacctgc 600
tgcctgggca nctctgcca 619

<210> 268
<211> 147
<212> DNA
<213> Homo sapien

<400> 268
cctataaccc agacaccagc atggacaaaa ctcagttata ctgaattcag agacaaaatt 60
cagtgacact cttctaccac ttatttaggg ttctacagca tttcactgag cagacttagt 120
tttttgtttt tgttttacaa acctttt 147

<210> 269
<211> 325
<212> DNA
<213> Homo sapien

<400> 269
ctgagctgta ggaatgggtt cttggtacac aagatagtat tgttgagcta gttttcgagc 60
tctgtgcaca agcactctgt aatcggggcc catgccactg tacaccaaac ctatatgctt 120
ggtaattggt tctactttgt gtacacttcg ctcatcatac agaatggatt tctgtttttt 180
ctcagttgct aataccacac catttgcagc tttaattccc acggacgggg ctcctccagc 240
tacagcagcc aaagcatatt caatctggac aagtttacca gacgggctga atgtagtcag 300
cgaaaagctg tacccgcgct ccgcc 325

<210> 270
<211> 428
<212> DNA
<213> Homo sapien

<400> 270
aaacatatgg taaattaccg agtgacacct ctgggctaga gacctctttt gaggggagtt 60
tgcaaactac ggattcaatt tctttaacag ttatgaagtt ctttaaagaa cctgtttggt 120
attggggggt tgtggtcacc tgtgcttttc tgagatttgg cccctacatc taagttgttg 180
aatgcatgtg tgtagagttg tttatggtgc ttccctttct tcttagaagg gtctatagta 240
atatcccctg ccttatccct agtagtacta atttgtgttt tcttacttct tgacaggcaa 300
acacatcaga gcataagtgg ttcctaatgc caagctgacc tcccttgatc tctgtcttct 360
acaggatatt gacatgggac ttctttatta ccttttcagt tcactgatac cttcaaatag 420
ctttattt 428

<210> 271
<211> 206
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(206)
<223> n = A,T,C or G

<400> 271
cgtcccggag cccacggngg ncatggctgg canagcgctc tgcatgctgg ggctggtcct 60
ggccttgctg tcctccagct ctgctgagga gtacgtgggc ctgtctgcaa accagtgngc 120
cgtgccagcc aaggacaggg tggactgcgg ctacccccat gtcacccccca aggagtgcan 180
caaccggggc tgctgctttg actcca 206

<210> 272
<211> 83
<212> DNA
<213> Homo sapien

<400> 272
ctggcttccc tgagaactca acaatgcctt ttcctgaggg ccttcctcga tcatccacaa 60
tgactacagc cctctctacc tgg 83

<210> 273
<211> 472
<212> DNA
<213> Homo sapien

<400> 273
ctggagaagg tgtgcagggg aaaccctgct gatgtcaccg aggccaggtt gtctttctac 60
tcgggacact cttcctttgg gatgtactgc atggtgttct tggcgctgta tgtgcaggca 120
cgactctgtt ggaagtgggc acggctgctg cgacccacag tccagttctt cctggtggcc 180
tttgccctct acgtgggcta cacccgcgtg tctgattaca aacaccactg gagcgatgtc 240
cttgttggcc tcctgcaggg ggcactggtg gctgccctca ctgtctgcta catctcagac 300
ttcttcaaag cccgaccccc acagcactgt ctgaaggagg aggagctgga acggaagccc 360
agcctgtcac tgacgttgac cctgggcgag gctgaccaca accactatgg atacccgcac 420
tcctcctcct gaggccggac cccgcccagg cagggagctg ctgtgagtcc ag 472

<210> 274
<211> 205
<212> DNA
<213> Homo sapien

<400> 274
ccaggcggcc cgaggactta cggtcggcac ttctctgttc tcccgtgtca gcgtgtggtg 60
tcgcctgcat gggtcgtacc tggatggtgt gtccaccatc gacacggagg ggctggattt 120
gtttctcagg caatcctgta ttttaatttt agatgtattt cctgaagcat atttttcata 180
gaatgtagcg tgtaaatagc ttttt 205

<210> 275
<211> 308
<212> DNA
<213> Homo sapien

<400> 275
ctcctcgccc tccccaccga catcatgctc cagttccagc ttggatttac actgggcaac 60
gtggttggaa tgtatctggc tcagaactat gatataccaa acctggctaa aaaacttgaa 120

gaaattaaaa aggacttgga tgccaagaag aaacccccta gtgcatgaga ctgcctccag 180
cactgccttc aggatatact gattctactg ctcttgaggg cctcgtttac tatctgaacc 240
aaaagctttt gttttcgtct ccagcctcag cacttctctt ctttgctaga ccctgtgttt 300
tttgcttt 308

<210> 276
<211> 201
<212> DNA
<213> Homo sapien

<400> 276
aaattaactt tttcttgcaa aatattcatt tcattttttc caagaaaatc ttataaaggc 60
aaaaataaaa ttttattttg gcaaatgtca tgaagtcgat actggcagca tatggagtta 120
gttaaaaata gacaacaact gctagatata ttcaaaattc tatttttttt tctgagcata 180
gtcaaagaga aattttcatt t 201

<210> 277
<211> 520
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(520)
<223> n = A,T,C or G

<400> 277
aaaaaaaaag tattcagcac catttgctca tnggtctttc agagtttgtt cttaaagttt 60
ctggaacttt cctgtctgta aagtaacagg aattactgag ctacattgga aagcctctct 120
gggacaggca gtggggagtt aagcagtcat cataaaggaa tcagtgtaca ttcagcatgg 180
tgacttgact acacaacaat cccttcccct ctactgtagc tcaagagaga catgcttcta 240
accactgagg tatgaggagt ctcagactgt tatttgctgt tagaattggt cttcccagct 300
aataacagta catctctggc acagatgcta ttggtcctta atgtcctgtg attttaggaa 360
atagtttgga tttagttcaa tttattcaga aaccaaacgt gtttaattag cttcactact 420
ctggcagagt aagggtatgc tggtttagta tctttataaa atatatataa tgtataggta 480
aatcatagtc ttaaatcata cctaaaatac tgtatcattt 520

<210> 278
<211> 264
<212> DNA
<213> Homo sapien

<400> 278
cgcgccgggc ggaactttcc agaacgctcg gtgagaggcg gaggagcggt aactaccccg 60
gctgcgcaca gctcggcgct ccttcccgct ccctcacaca ccggcctcag cccgcaccgg 120
cagtagaaga tggtgaaaga aacaacttac tacgatgttt tggggtcaa acccaatgct 180
actcaggaag aattgaaaaa ggcttatagg aaactggcct tgaagtacca tcctgataag 240
aacccaaatg aaggagagaa gttt 264

<210> 279
<211> 414
<212> DNA
<213> Homo sapien

<400> 279
aaacatacaa taatttttat tatggaaatt aatctttaca tacaaaatca gctacgtaat 60
tttacttaca aaacaataaa aactgttctt tactgtggca acaaaagaag cattttgaca 120
aatgaaaaaa attaatgcaa acaaattaaa acaatgcttt tctttttact tgcttcactg 180
tctcttctat ttattttcta tgatcatttg acacaaacat ggattacttt gatatctact 240
gaaacataaa tgataaggtt cttaaaggtt gaattaaaag tctgggtgtt caatatttta 300
gaagctgaat aaacaaaacg aaattggggt ttgtgattac agaggattta tcatttttc 360
cctttgtcca tatgaaaata tataatagaa aattacccac gggaaaacat tttt 414

<210> 280
<211> 262
<212> DNA
<213> Homo sapien

<400> 280
ccaccatgcc tggcctgctt caatttttg atgccacttt gtaaacggca cttaattatg 60
gaaaatagga aaaagcaaaa ctaaaataag gaagaggata tatatataac ttttcacaat 120
ctcttttctg atcccttta gatgcccagt caaccaggac cacacacaga tttcatttta 180
tttgtagagt atatgaaaag atttaatagt ctcatgcatt ttattttacg tatactgatt 240
tctacgtttt gactgactat tt 262

<210> 281
<211> 349
<212> DNA
<213> Homo sapien

<400> 281
ctgtgacccg ggtgcatcag tggatatagt tgtgtctccc catgggggtt taacagtctc 60
tgcccaagac cgttttctga taatggctgc agaaatggaa cagtcatctg gcacaggccc 120
agcagaatta actcagtttt ggaaagaagt tcccagaaac aaagtgatgg aacataggtt 180
aagatgccat actgttgaaa gcagtaaacc aaacactctt acgttaaaag acaatgcttt 240
caatatgtca gataaaacca gtgaagatat atgtctacaa ctcagtcgtt tactagaaag 300
caataggaag cttgaagacc aagttcagcg ttgtatctgg ttccagcag 349

<210> 282
<211> 381
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(381)
<223> n = A,T,C or G

<400> 282
aaacactaaa tgaagcttct cacaatttct aattataaac aaaaggctga aaacagtatg 60
ggaaacaaag tttcaaaaca aagaaaagtt gagtaaaagg tgccccctct atggctcatc 120
tgaaagaaac attttactca gagaggcaaa catttctgat ctaggagtaa gtttcccact 180
cactttgcaa ggacccactc attctgcana aagacctaca agtctttctg gtctcaattg 240
caaagtacgt gaaaatgtgt atgaaagatc taaaagctaa atattagaat aaggctaatt 300
gaaatcaaaa ttgtgtgctg gtctaaatat acatcttcgg cttcttcctt tttagtaagt 360
atttttattt cagatgtatt t 381

<210> 283

<211> 543
<212> DNA
<213> Homo sapien

<400> 283
aatatagctc ctccctaccc ccaacaatgg accctgccca ttgcctccca gttccttgat 60
cttcctaggt tccacaactc tctttttcct tttagtttta ttccctccag ccaaacctct 120
cttattcaat attttgagcc aatgggggag ttatgtagat ttttttccct acacattagc 180
tggccccttt tatgaccaat gactcataag gcaagatgtg tggtggcatc ttcggacagg 240
cagcaggctt taatagggca gcctgggttg gtggaggcaa gcaaagctaa ttggcatgcg 300
tgggaatcaa accccaggcc ctgggctcat tagcccatgg tcaaaacaac tgagccagag 360
gaggtaataa tttgcccaag aatatcagta gttcctttat tagaagaaaa tggctgatat 420
ggaagttggg gaatctgaat tgccagagaa tcttgggaag agtaataagc tcttagtctc 480
aacaaaaagt gtttttttcat ctcagcgcgt aaagggtgct atatgggaac aaagaagtat 540
ttt 543

<210> 284
<211> 147
<212> DNA
<213> Homo sapien

<400> 284
aaactggtat tttatctttg attctccttc agccctcacc cctggttctc atctttcttg 60
atcaacatct tttcttgcct ctgtcccctt ctctcatctc ttagctcccc tccaacctgg 120
ggggcagtgg tgtggagaag ccacagg 147

<210> 285
<211> 316
<212> DNA
<213> Homo sapien

<400> 285
cggccgaggt ctggcttcac tcctactccc tctctgctcg cagcacgtcg gccgccagct 60
ctttgatgtg ttcccaggcc cgctgcacat gggcagattc caccgtgcga gaacagatgg 120
caaagcgcag gacaaacttg tccctgaggt gacatggaac caagtggatt tttttggcac 180
tgtttattct ttgcagaaga gcttcattca ctttgttgga accctttagc cgaaagcaga 240
caagccccag aatgacttcc acacagattt caaagcgggg atcctggcgc accagtgact 300
caaactcatg ggacag 316

<210> 286
<211> 322
<212> DNA
<213> Homo sapien

<400> 286
cctggggagc cctttagtgg ggtgggacct caggcagacc cccaaaccaa agggagccag 60
atgcccaagt tcaagtcatt agtgatatgt ggcagggctg acagagaaat aatcctggag 120
gtctccaaag ctgctgggaa tggaatggcg atgaaaagcg caggagtggg cagggtgtgg 180
tgggtgatgg tggcctcact cagagtggac caaggcccca gctccttgcc caaaaccaaa 240
gcccttgggc ccgaagtttt tagcataaca tcctttgcag taaatctcgc catccttgtc 300
tgccagggtg gttgactcaa gg 322

<210> 287
<211> 364

<212> DNA
<213> Homo sapien

<400> 287
ctgcccacgc tcaaaccaat tctggctgat atcgagtacc tgcaggacca gcacctcctg 60
ctcacagtca agtccatgga tggctatgaa tcctatgggg agtgtgtggt tgcactcaaa 120
tccatgatcg gcagcacggc ccaacagttc ctgaccttcc tatcccaccg tggcgaggag 180
acaggcaata tcagaggctc catgaaggtg cgggtgccca cggagcgcct gggcacccgt 240
gagcggctct acgagtggat cagcattgat aaggatgagg caggagcaaa gagcaaagcc 300
ccctctgtgt cccgagggag ccaggagccc aggtcaggga gccgcaagcc agccttcaca 360
gagg 364

<210> 288
<211> 261
<212> DNA
<213> Homo sapien

<400> 288
aaaattataa ctactcattc tttctttagc cttagttaat ttgagcagaa gccacaacaa 60
gcaaaccaca ataaatttag aattggcaga aatccacatt aactcctctt cccaagtttc 120
cacactacta ccatttacag ttgtaggttt gtaatgtata attatgtaat gcagaaacta 180
gctttgactt gtgtaacgat gcactgtcaa agtaagcaaa gtaagaattg aaattccaca 240
ttcccagaat ttaacactca g 261

<210> 289
<211> 261
<212> DNA
<213> Homo sapien

<400> 289
ctgagtgtta aattctggga atgtggaatt tcaattctta ctttgcttac tttgacagtg 60
catcgttaca caagtcaaag ctagtttctg cattacataa ttatacatta caaacctaca 120
actgtaaatg gtagtagtgt ggaaacttgg gaagaggagt taatgtggat ttctgccaat 180
tctaaattta ttgtggtttg cttgttgtgg cttctgctca aattaactaa ggctaaagaa 240
agaatgagta gttataattt t 261

<210> 290
<211> 92
<212> DNA
<213> Homo sapien

<400> 290
ccactacccg aacttacagg tgccaaaaga agaaagggta taaacggaga ccacctatca 60
ctcatcagaa cctaggatca tcacattcct tt 92

<210> 291
<211> 287
<212> DNA
<213> Homo sapien

<400> 291
ccatggctcc gctcagggcc ccggtcacct ccgagtcact ctgttccttg actgtctttg 60
tgtttctgta cctcaaggca ctgaagctgg aggactctgt ccatgcctgt gtcaccctcg 120
tgtgggagcc tctgggctcg gcaggtccac atttcatgag ctgaggcgtg ggccagggcc 180

atctggaaag ggaactcggc ttttccagaa cgtggtggat catctgtcgg gtgtgtggtg 240
aacacgttca gttcatcagg gcctacgctc cgggaagggg cccccag 287

<210> 292
<211> 270
<212> DNA
<213> Homo sapien

<400> 292
ccattgtttc ctcgctggcg aaggctcctt gaacatccct caccttcctc tcccgcctct 60
gccttctgct gggtcaaagg tggccttttc tctccagcct tgaattgttc cctgttggct 120
tcccaagggc ccatctgctg gtacagtcca cacttccaca gccaagaccc gagagggctt 180
tcactgcccc aagcctctct cctgtgaccc tgggattctg tcttggcaga atcctttgtc 240
agcggctctt actctgtcct tcctgtttgg 270

<210> 293
<211> 333
<212> DNA
<213> Homo sapien

<400> 293
ccatgctcgt caacctggtg tccactgctt gctacgtctc cttcctcttc ctgggctgcg 60
acactggccc tgtggctggg gttactgttc cctatggaaa cagcacagca cctggctcag 120
ccctggaccc ctactcgccc tgcaataata actgtgaatg ccaaaccgat tccttcactc 180
cagtgtgtgg ggcagatggc atcacctacc tgtctgcctg ctttgctggc tgcaacagca 240
cgaatctcac gggctgtgcg tgcctcacca ccgtccctgc tgagaacgca accgtggttc 300
ctggaaaatg ccccagtcct gggtgccaag agg 333

<210> 294
<211> 123
<212> DNA
<213> Homo sapien

<400> 294
ctgatacaaa tacagaaaac tctgcccatt atccaagaaa caaataatta agactaaaat 60
gcaagctgat gtgttgcagc attgtagggc cactaaatag ccatctgtga ttcgtggcaa 120
ttt 123

<210> 295
<211> 311
<212> DNA
<213> Homo sapien

<400> 295
ctgcatacag acatttgttt aggtcatctg gattatcttg attgtcacca tggcaactat 60
ccacaaccag tgcctaggtg tgtgagaaga gtgatacaat aatactgtgg catggtcatt 120
tagctaatcc agtctaagcc taacagaaac cttttccatc aaagtttttc agagaataac 180
aacatctcat aagaggccag aggatggctt gtgcttaata tcacacctgt acagtagggc 240
agtgcttccc aggctgtctg cttacatttt agcttgtctt acggttacat atggttttag 300
tattttcatt t 311

<210> 296
<211> 241
<212> DNA

<213> Homo sapien

<400> 296
ctgcggaaga tctgcaacca cccctacatg ttccagcaca tcgaggagtc cttttccgag 60
cacttggggt tcactggcgg cattgtccaa gggctggacc tgtaccgagc ctcgggtaaa 120
tttgagcttc ttgatagaat tcttcccaaa ctccgagcaa ccaaccacaa agtgctgctg 180
ttctgccaaa tgacctccct catgaccatc atggaagatt actttgcgta tcgcggcttt 240
a 241

<210> 297
<211> 295
<212> DNA
<213> Homo sapien

<400> 297
aaacacaaga tgaaaatact ctgttctgtc caaagcatca cctaatggtg tgaggcatct 60
cacttagctg tggagaagtc cttggaatta gatctcagaa agacagcttt aagacagtaa 120
aaccttttgg caatgggcta attgccttaa aagaagagtt ctacctgaaa gaccttgcag 180
gtggagaaat tgtcctacaa agattcttgg atatgttagt ggagataact gacatgggta 240
gctgtgggtc aaccaggaac tgtcaacaac ctgatctctg caaaaccagg atgga 295

<210> 298
<211> 347
<212> DNA
<213> Homo sapien

<400> 298
ccaaaataaa gcttcaggca agaggcaaag atccagtgga atatgggaga atggtggagg 60
accaacacct gctaccccag agagcttttc taaaaaaagc aagaaagcag tcatgagtgg 120
tattcaccct gcagaagaca cggaaggtac tgagtttgag ccagagggac ttccagaagt 180
tgtaaagaaa gggtttgctg acatcccgac aggaaagact agcccatata tcctgcgaag 240
aacaaccatg gcaactcgga ccagcccccg cctggctgca cagaagttag cgctatcccc 300
actgagtctc ggcaaagaaa atcttgcaga gtcctccaaa ccaacag 347

<210> 299
<211> 268
<212> DNA
<213> Homo sapien

<400> 299
aaaaagtaaa catgaaaaca tcacgaattg taccatgatt caagaataac ttttgtaata 60
gaaaacacat gaccttttgc agtatagtgt gataccgaag taaaagtgaa agaaataaat 120
gcaggaaagt ttaagtggat gtaagttttt ataaggaaag taataagagg aggctgcttt 180
tgaaggtcct ttgatcttcc atgatgataa tatcgttgca aagttcttta acttgtattc 240
aagtaattag cagttgacca cttggttt 268

<210> 300
<211> 185
<212> DNA
<213> Homo sapien

<400> 300
aaattggaga aggaagtttt cctgaagagc cagaatcctt gctaagtcat ttagatccaa 60
ctgaccatct ttatttctgt caaaaatctt catcatggtg ccggtgtatt cttccagttt 120

agcctcagaa atggcctttc tgtggtgaag aaagaggtct cggaggaagt tgcggagctc 180
agcag 185

<210> 301
<211> 75
<212> DNA
<213> Homo sapien

<400> 301
aaaattggaa agtgggataa gaaatctaaa gtaaccagct tatctttgaa acaatattat 60
tttgaaattg gcttt 75

<210> 302
<211> 247
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(247)
<223> n = A,T,C or G

<400> 302
ccatgttctc tgaattgggt gcagaagaca agggcagagt ggctgcggcc cctattacct 60
ttgtagcagc cacatcagaa agcagaagaa aacagtattt ctgaaggcat tgtttgaggt 120
tgatctcagc actgaacgat ttcaagccct acgcaccana acagaaggag ggtggaggaa 180
gtgatcanag ggaacgagct gtaggtttgc anaaatgtgt gaaaccaaaa tgatcactgc 240
ctacttg 247

<210> 303
<211> 535
<212> DNA
<213> Homo sapien

<400> 303
ctgcttcaga ggaaatcact gaaaaataaa gaaaaaccat ccatgcatgg ctgcatccag 60
tgtacctgta atcctgaaga aaaggtccta attccttcca tgctgaaatg ctagctttgg 120
tttcagagag agactttatt gcaactgtga ccaccgtcac tggtgagcac tgctgttcgg 180
cccccagcgg acttaaaaga ctggaatgtg gtagtggcgg tcgttctcgg tcagcaggga 240
gatctccggc cagtccctga gaggctcctc tgggtagcag acttcaaagt ctctggagtt 300
aaacttgaac agtctgaaca cttttatctt tacttcaagg gagtatccaa gtataaacat 360
atcaatctgc tctagtccac atgtgtcgcc tacagaattc aggtgattca tcatgaagct 420
caaaggatca gaggatgtct ccctggaaaa caggagtcta aaaagactgg gaatgacctt 480
tttagtcttc atttgttcat aaacttcagt gacttgatac agcatgatga acttt 535

<210> 304
<211> 522
<212> DNA
<213> Homo sapien

<400> 304
ccgcgctcgg tctacaatca cgttttatta ttggctcgtc tagtcatggg atagagaagg 60
taaatagcaa aatagaaaga aaagggggaa aaggtagaag gcaaggggaa aactattggt 120
tttagatctt tatcctggtc ctgtcaatga tcaggtaatt ggaaggatca aaattaggcc 180

aaacttggta attgggccaa aattgaacca aagtttgtgt caagaagacc tggggcagag 240
atatgtgact aaatcatttg gaatatgccc agaccccaag aatatttatg cccaacttga 300
atgctaacca gaagtccctt actgtagaag attgtaaggt tgctattttt ttgccccgac 360
accaaaatat tgatgtattt tccaacacca attctccaat tctctgacac caactcgatg 420
ttcaacaatt cagttatatt ctgtcactaa ttcctgcagc tatcagcagg ccccacaggt 480
aaaggattca gtctcacaag attgcccccc cacccacttc ag 522

<210> 305
<211> 165
<212> DNA
<213> Homo sapien

<400> 305
cctaaagcgc tcctcgctga agctcaaggg gtccacaatg atttgtttgt caaagttatt 60
gagtgcatat gccagttctc ctcctcctcc accctggtgc tgtgaggcat cgtctgaggc 120
agtggcctgg gctgcattgg aaatgcctgt gaccgcctgc tgcag 165

<210> 306
<211> 294
<212> DNA
<213> Homo sapien

<400> 306
ctgcacctaa gacatggccc tggctaggcg ggaacagctc acagtagcga tacattcaca 60
ggacacagtt ggtgtccaga aaaggggct cagaacacag tttctacaca agcacttggc 120
acccacacga cagagacgtc actcaagcag cacagccaca aatagtttac agcagctcat 180
gcccggcatc cgcccatgct gggagactcc ctgaaaggtg ggcacctgcc gtctatgagg 240
aggtgtctcc ctccatcatt aaccccaaac cacacaatgt gtgaggagag cagg 294

<210> 307
<211> 181
<212> DNA
<213> Homo sapien

<400> 307
aaaaatccat gacaccttga tagaaattag agtttacaca aacaaaaaag gaaccttcga 60
tattgccagc agctataaag tgaacgtact gagaccgaca ggacagcaag aaggcatttg 120
cacatttata tctgacaccc gaccatactt tcagtcacca gaatatcttc tctccagatt 180
t 181

<210> 308
<211> 179
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(179)
<223> n = A,T,C or G

<400> 308
aaggctgagg actgctggga gctcagatca gcccggagct actggctcat gggcagccaa 60
aaaatactgg atctgctgaa cgaaggctca gcccgagatc tccgcagtct tcagcgcatt 120
ggcccgaaga aggcccanct aatcgtgggc tggcgggagc tccacggccc cttcagcca 179

<210> 309
<211> 129
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(129)
<223> n = A,T,C or G

<400> 309
ctgcccgctt gcccgtagct gactcagntt cctcatcttc atctccatcc tcttcctcac 60
catcaccttc ttcttcctcc tcctcttcct ccccaccttc ttcctcttct tcgtctacct 120
cattgtcag 129

<210> 310
<211> 390
<212> DNA
<213> Homo sapien

<400> 310
tgaggctggg ggagagccgt ggtccctgag gatgggtcag agctaaactc cttcctggcc 60
tgagagtcag ctctctgccc tgtgtacttc ccgggccagg gctgccccta atctctgtag 120
gaaccgtggt atgtctgcat gttgcccctt tctcttttcc cctttcctgt cccaccatac 180
gagcacctcc agcctgaaca gaagctctta ctctttccta tttcagtgtt acctgtgtgc 240
ttggtctgtt tgactttacg cccatctcag gacacttccg tagactgttt aggttcccct 300
gtcaaatatc agttacccac tcggtcccag ttttgttgcc ccagaaaggg atgttattat 360
ccttgggggc tcccagggca agggttaagg 390

<210> 311
<211> 355
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(355)
<223> n = A,T,C or G

<400> 311
cctctctgtg ctgctgaagg cagatcgctt gttccacacc agctaccact cccaggcagt 60
gcatatccgc ctgttgagaa atgccgtgtc tagattgtgg acaagagcct gcgtgattat 120
gctatangga naaaaattct tcgagttcca cccnanctcc tctaaacatt tggctcactc 180
aaaacaaaaa gncaccaatc ttantactgc tgaacttcat ttatgtnacc taacattaac 240
cntcgtagga aaaccaaata gccctctcgt ncangatatg ttgctaaagg actaccntgt 300
tcaacacaac ggctccggtg tgtgaactcc tgtttgggtg attcccctac tctca 355

<210> 312
<211> 498
<212> DNA
<213> Homo sapien

<400> 312

ccattctttt gaatctaatc tattatcaat agcatcctcc ataatatctt tgataaaagg 60
tgtccaccga gagagctgaa aagtttcttc tgcagaccga tcctttctta acggtttgcc 120
ttgttgagat tggggaacaa tgggaacacc aaggtaactc cagttacgaa tcatgtcact 180
ctcattttct atctttacat tctggatcaa cctgtccaaa ttttcttccg tagttccatt 240
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<212> DNA
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<213> Homo sapiens

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gctgcgattg gg 3132

<210> 321
<211> 2280
<212> DNA
<213> Homo sapiens

<400> 321
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tactacatta attcggcagc ctcgttcttc gccttcatcg ccacgctgct ctacattctc 420
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actatttact aagtagccac atgcaaataa aagttgtttg gtaaaatgga aaaaaaaaa 2280

<210> 322
<211> 1398
<212> DNA
<213> Homo sapiens

<400> 322
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ctaacccaaa ggaattgaaa ggaaccactc attcacttct agacgacaaa atgcaaaaaa 180
ggaggccaaa gacttttgga atggatatga aagcatacct gagatctatg atcccacatc 240
tggaatctgg aatgaaatct tccaagtcca aggatgtact ttctgctgct gaagtaatgc 300
aatggtctca atctctggaa aaacttcttg ccaaccaaac tggtcaaaat gtctttggaa 360
gtttcctaaa gtctgaattc agtgaggaga atattgagtt ctggctggct tgtgaagact 420
ataagaaaac agagtctgat cttttgccct gtaaagcaga agagatatat aaagcatttg 480
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atgacctgca ggctaatagc ctaaagtgac tggtccctgg ctgaagggaa ttaacagata 720
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ttcatttaaa aaaaaaaa 1398

<210> 323
<211> 1316
<212> DNA
<213> Homo sapiens

<400> 323
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gtgaaagaag cagtgaaggt ggccattgat gcaggatatc ggcacattga ctgtgcctat 180
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acggcctaca gcccccctggg ctctccggat agaccttggg ccaagccaga agacccttcc 720
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<210> 324
<211> 200
<212> PRT
<213> Homo sapiens

<400> 324
Met Ala Lys Gly Asp Pro Lys Lys Pro Lys Gly Lys Thr Ser Ala Tyr
5 10 15

Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys Asn Pro
20 25 30

Glu Val Pro Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45

Trp Lys Thr Val Ser Gly Lys Glu Lys Ser Lys Phe Asp Glu Met Ala
50 55 60

Lys Ala Asp Lys Val Arg Tyr Asp Arg Glu Met Lys Asp Tyr Gly Pro
65 70 75 80

Ala Lys Gly Gly Lys Lys Lys Lys Asp Pro Asn Ala Pro Lys Arg Pro
85 90 95

Pro Ser Gly Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys Ile Lys
100 105 110

Ser Thr Asn Pro Gly Ile Ser Ile Gly Asp Val Ala Lys Lys Leu Gly
115 120 125

Glu Met Trp Asn Asn Leu Asn Asp Ser Glu Lys Gln Pro Tyr Ile Thr
130 135 140

Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Val Ala Asp Tyr
145 150 155 160

Lys Ser Lys Gly Lys Phe Asp Gly Ala Lys Gly Pro Ala Lys Val Ala
165 170 175

Arg Lys Lys Val Glu Glu Glu Asp Glu Glu Gln Glu Glu Glu Glu Glu
180 185 190

Glu Glu Glu Glu Glu Glu Asp Glu
195 200

<210> 325
<211> 263
<212> PRT
<213> Homo sapiens

<400> 325
Met Phe Arg Asn Gln Tyr Asp Asn Asp Val Thr Val Trp Ser Pro Gln
1   5   10   15

Gly Arg Ile His Gln Ile Glu Tyr Ala Met Glu Ala Val Lys Gln Gly
            20   25   30

Ser Ala Thr Val Gly Leu Lys Ser Lys Thr His Ala Val Leu Val Ala
        35   40   45

Leu Lys Arg Ala Gln Ser Glu Leu Ala Ala His Gln Lys Lys Ile Leu
    50   55   60

His Val Asp Asn His Ile Gly Ile Ser Ile Ala Gly Leu Thr Ala Asp
65   70   75   80

Ala Arg Leu Leu Cys Asn Phe Met Arg Gln Glu Cys Leu Asp Ser Arg
                85   90   95

Phe Val Phe Asp Arg Pro Leu Pro Val Ser Arg Leu Val Ser Leu Ile
            100   105   110

Gly Ser Lys Thr Gln Ile Pro Thr Gln Arg Tyr Gly Arg Arg Pro Tyr
        115   120   125

Gly Val Gly Leu Leu Ile Ala Gly Tyr Asp Asp Met Gly Pro His Ile
    130   135   140

Phe Gln Thr Cys Pro Ser Ala Asn Tyr Phe Asp Cys Arg Ala Met Ser
145   150   155   160

Ile Gly Ala Arg Ser Gln Ser Ala Arg Thr Tyr Leu Glu Arg His Met
                165   170   175

Ser Glu Phe Met Glu Cys Asn Leu Asn Glu Leu Val Lys His Gly Leu
            180   185   190

Arg Ala Leu Arg Glu Thr Leu Pro Ala Glu Gln Asp Leu Thr Thr Lys
        195   200   205

Asn Val Ser Ile Gly Ile Val Gly Lys Asp Leu Glu Phe Thr Ile Tyr
    210   215   220

Asp Asp Asp Asp Val Ser Pro Phe Leu Glu Gly Leu Glu Glu Arg Pro
225   230   235   240

Gln Arg Lys Ala Gln Pro Ala Gln Pro Ala Asp Glu Pro Ala Glu Lys
                245   250   255

Ala Asp Glu Pro Met Glu His
260

<210> 326
<211> 539
<212> PRT
<213> Homo sapiens

<400> 326
Met Pro Glu Asn Val Ala Pro Arg Ser Gly Ala Thr Ala Gly Ala Ala
1 5 10 15

Gly Gly Arg Gly Lys Gly Ala Tyr Gln Asp Arg Asp Lys Pro Ala Gln
20 25 30

Ile Arg Phe Ser Asn Ile Ser Ala Ala Lys Ala Val Ala Asp Ala Ile
35 40 45

Arg Thr Ser Leu Gly Pro Lys Gly Met Asp Lys Met Ile Gln Asp Gly
50 55 60

Lys Gly Asp Val Thr Ile Thr Asn Asp Gly Ala Thr Ile Leu Lys Gln
65 70 75 80

Met Gln Val Leu His Pro Ala Ala Arg Met Leu Val Glu Leu Ser Lys
85 90 95

Ala Gln Asp Ile Glu Ala Gly Asp Gly Thr Thr Ser Val Val Ile Ile
100 105 110

Ala Gly Ser Leu Leu Asp Ser Cys Thr Lys Leu Leu Gln Lys Gly Ile
115 120 125

His Pro Thr Ile Ile Ser Glu Ser Phe Gln Lys Ala Leu Glu Lys Gly
130 135 140

Ile Glu Ile Leu Thr Asp Met Ser Arg Pro Val Glu Leu Ser Asp Arg
145 150 155 160

Glu Thr Leu Leu Asn Ser Ala Thr Thr Ser Leu Asn Ser Lys Val Val
165 170 175

Ser Gln Tyr Ser Ser Leu Leu Ser Pro Met Ser Val Asn Ala Val Met
180 185 190

Lys Val Ile Asp Pro Ala Thr Ala Thr Ser Val Asp Leu Arg Asp Ile
195 200 205

Lys Ile Val Lys Lys Leu Gly Gly Thr Ile Asp Asp Cys Glu Leu Val
210 215 220

Glu Gly Leu Val Leu Thr Gln Lys Val Ser Asn Ser Gly Ile Thr Arg
225 230 235 240

Val Glu Lys Ala Lys Ile Gly Leu Ile Gln Phe Cys Leu Ser Ala Pro
245 250 255

Lys Thr Asp Met Asp Asn Gln Ile Val Val Ser Asp Tyr Ala Gln Met
260 265 270

Asp Arg Val Leu Arg Glu Glu Arg Ala Tyr Ile Leu Asn Leu Val Lys
275 280 285

Gln Ile Lys Lys Thr Gly Cys Asn Val Leu Leu Ile Gln Lys Ser Ile
290 295 300

Leu Arg Asp Ala Leu Ser Asp Leu Ala Leu His Phe Leu Asn Lys Met
305 310 315 320

Lys Ile Met Val Ile Lys Asp Ile Glu Arg Glu Asp Ile Glu Phe Ile
325 330 335

Cys Lys Thr Ile Gly Thr Lys Pro Val Ala His Ile Asp Gln Phe Thr
340 345 350

Ala Asp Met Leu Gly Ser Ala Glu Leu Ala Glu Glu Val Asn Leu Asn
355 360 365

Gly Ser Gly Lys Leu Leu Lys Ile Thr Gly Cys Ala Ser Pro Gly Lys
370 375 380

Thr Val Thr Ile Val Val Arg Gly Ser Asn Lys Leu Val Ile Glu Glu
385 390 395 400

Ala Glu Arg Ser Ile His Asp Ala Leu Cys Val Ile Arg Cys Leu Val
405 410 415

Lys Lys Arg Ala Leu Ile Ala Gly Gly Gly Ala Pro Glu Ile Glu Leu
420 425 430

Ala Leu Arg Leu Thr Glu Tyr Ser Arg Thr Leu Ser Gly Met Glu Ser
435 440 445

Tyr Cys Val Arg Ala Phe Ala Asp Ala Met Glu Val Ile Pro Ser Thr
450 455 460

Leu Ala Glu Asn Ala Gly Leu Asn Pro Ile Ser Thr Val Thr Glu Leu
465 470 475 480

Arg Asn Arg His Ala Gln Gly Glu Lys Thr Ala Gly Ile Asn Val Arg
485 490 495

Lys Gly Gly Ile Ser Asn Ile Leu Glu Glu Leu Val Val Gln Pro Leu
500 505 510

Leu Val Ser Val Ser Ala Leu Thr Leu Ala Thr Glu Thr Val Arg Ser
515 520 525

Ile Leu Lys Ile Asp Asp Val Val Asn Thr Arg
    530   535

<210> 327
<211> 144
<212> PRT
<213> Homo sapiens

<400> 327
Met Ala Phe Thr Phe Ala Ala Phe Cys Tyr Met Leu Ala Leu Leu Leu
                 5   10   15

Thr Ala Ala Leu Ile Phe Phe Ala Ile Trp His Ile Ile Ala Phe Asp
             20   25   30

Glu Leu Lys Thr Asp Tyr Lys Asn Pro Ile Asp Gln Cys Asn Thr Leu
         35   40   45

Asn Pro Leu Val Leu Pro Glu Tyr Leu Ile His Ala Phe Phe Cys Val
     50   55   60

Met Phe Leu Cys Ala Ala Glu Trp Leu Thr Leu Gly Leu Asn Met Pro
 65   70   75   80

Leu Leu Ala Tyr His Ile Trp Arg Tyr Met Ser Arg Pro Val Met Ser
                 85   90   95

Gly Pro Gly Leu Tyr Asp Pro Thr Thr Ile Met Asn Ala Asp Ile Leu
            100   105   110

Ala Tyr Cys Gln Lys Glu Gly Trp Cys Lys Leu Ala Phe Tyr Leu Leu
        115   120   125

Ala Phe Phe Tyr Tyr Leu Tyr Gly Met Ile Tyr Val Leu Val Ser Ser
    130   135   140

<210> 328
<211> 138
<212> PRT
<213> Homo sapiens

<400> 328
Met Pro Asn Phe Ser Gly Asn Trp Lys Ile Ile Arg Ser Glu Asn Phe
                 5   10   15

Glu Glu Leu Leu Lys Val Leu Gly Val Asn Val Met Leu Arg Lys Ile
             20   25   30

Ala Val Ala Ala Ala Ser Lys Pro Ala Val Glu Ile Lys Gln Glu Gly
         35   40   45

Asp Thr Phe Tyr Ile Lys Thr Ser Thr Thr Val Arg Thr Thr Glu Ile
50 55 60

Asn Phe Lys Val Gly Glu Glu Phe Glu Glu Gln Thr Val Asp Gly Arg
65 70 75 80

Pro Cys Lys Ser Leu Val Lys Trp Glu Ser Glu Asn Lys Met Val Cys
85 90 95

Glu Gln Lys Leu Leu Lys Gly Glu Gly Pro Lys Thr Ser Trp Thr Arg
100 105 110

Glu Leu Thr Asn Asp Gly Glu Leu Ile Leu Thr Met Thr Ala Asp Asp
115 120 125

Val Val Cys Thr Arg Val Tyr Val Arg Glu
130 135

<210> 329
<211> 346
<212> PRT
<213> Homo sapiens

<400> 329
Met Phe Leu Ser Ile Leu Val Ala Leu Cys Leu Trp Leu His Leu Ala
5 10 15

Leu Gly Val Arg Gly Ala Pro Cys Glu Ala Val Arg Ile Pro Met Cys
20 25 30

Arg His Met Pro Trp Asn Ile Thr Arg Met Pro Asn His Leu His His
35 40 45

Ser Thr Gln Glu Asn Ala Ile Leu Ala Ile Glu Gln Tyr Glu Glu Leu
50 55 60

Val Asp Val Asn Cys Ser Ala Val Leu Arg Phe Phe Phe Cys Ala Met
65 70 75 80

Tyr Ala Pro Ile Cys Thr Leu Glu Phe Leu His Asp Pro Ile Lys Pro
85 90 95

Cys Lys Ser Val Cys Gln Arg Ala Arg Asp Asp Cys Glu Pro Leu Met
100 105 110

Lys Met Tyr Asn His Ser Trp Pro Glu Ser Leu Ala Cys Asp Glu Leu
115 120 125

Pro Val Tyr Asp Arg Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr
130 135 140

Asp Leu Pro Glu Asp Val Lys Trp Ile Asp Ile Thr Pro Asp Met Met
145 150 155 160

Val Gln Glu Arg Pro Leu Asp Val Asp Cys Lys Arg Leu Ser Pro Asp
165 170 175

Arg Cys Lys Cys Lys Lys Val Lys Pro Thr Leu Ala Thr Tyr Leu Ser
180 185 190

Lys Asn Tyr Ser Tyr Val Ile His Ala Lys Ile Lys Ala Val Gln Arg
195 200 205

Ser Gly Cys Asn Glu Val Thr Thr Val Val Asp Val Lys Glu Ile Phe
210 215 220

Lys Ser Ser Ser Pro Ile Pro Arg Thr Gln Val Pro Leu Ile Thr Asn
225 230 235 240

Ser Ser Cys Gln Cys Pro His Ile Leu Pro His Gln Asp Val Leu Ile
245 250 255

Met Cys Tyr Glu Trp Arg Ser Arg Met Met Leu Leu Glu Asn Cys Leu
260 265 270

Val Glu Lys Trp Arg Asp Gln Leu Ser Lys Arg Ser Ile Gln Trp Glu
275 280 285

Glu Arg Leu Gln Glu Gln Arg Arg Thr Val Gln Asp Lys Lys Lys Thr
290 295 300

Ala Gly Arg Thr Ser Arg Ser Asn Pro Pro Lys Pro Lys Gly Lys Pro
305 310 315 320

Pro Ala Pro Lys Pro Ala Ser Pro Lys Lys Asn Ile Lys Thr Arg Ser
325 330 335

Ala Gln Lys Arg Thr Asn Pro Lys Arg Val
340 345

<210> 330
<211> 826
<212> PRT
<213> Homo sapiens

<400> 330
Met Glu Gly Ala Gly Gly Ala Asn Asp Lys Lys Lys Ile Ser Ser Glu
5 10 15

Arg Arg Lys Glu Lys Ser Arg Asp Ala Ala Arg Ser Arg Arg Ser Lys
20 25 30

Glu Ser Glu Val Phe Tyr Glu Leu Ala His Gln Leu Pro Leu Pro His
35 40 45

Asn Val Ser Ser His Leu Asp Lys Ala Ser Val Met Arg Leu Thr Ile

50 55 60

Ser Tyr Leu Arg Val Arg Lys Leu Leu Asp Ala Gly Asp Leu Asp Ile
65 70 75 80

Glu Asp Asp Met Lys Ala Gln Met Asn Cys Phe Tyr Leu Lys Ala Leu
85 90 95

Asp Gly Phe Val Met Val Leu Thr Asp Asp Gly Asp Met Ile Tyr Ile
100 105 110

Ser Asp Asn Val Asn Lys Tyr Met Gly Leu Thr Gln Phe Glu Leu Thr
115 120 125

Gly His Ser Val Phe Asp Phe Thr His Pro Cys Asp His Glu Glu Met
130 135 140

Arg Glu Met Leu Thr His Arg Asn Gly Leu Val Lys Lys Gly Lys Glu
145 150 155 160

Gln Asn Thr Gln Arg Ser Phe Phe Leu Arg Met Lys Cys Thr Leu Thr
165 170 175

Ser Arg Gly Arg Thr Met Asn Ile Lys Ser Ala Thr Trp Lys Val Leu
180 185 190

His Cys Thr Gly His Ile His Val Tyr Asp Thr Asn Ser Asn Gln Pro
195 200 205

Gln Cys Gly Tyr Lys Lys Pro Pro Met Thr Cys Leu Val Leu Ile Cys
210 215 220

Glu Pro Ile Pro His Pro Ser Asn Ile Glu Ile Pro Leu Asp Ser Lys
225 230 235 240

Thr Phe Leu Ser Arg His Ser Leu Asp Met Lys Phe Ser Tyr Cys Asp
245 250 255

Glu Arg Ile Thr Glu Leu Met Gly Tyr Glu Pro Glu Glu Leu Leu Gly
260 265 270

Arg Ser Ile Tyr Glu Tyr Tyr His Ala Leu Asp Ser Asp His Leu Thr
275 280 285

Lys Thr His His Asp Met Phe Thr Lys Gly Gln Val Thr Thr Gly Gln
290 295 300

Tyr Arg Met Leu Ala Lys Arg Gly Gly Tyr Val Trp Val Glu Thr Gln
305 310 315 320

Ala Thr Val Ile Tyr Asn Thr Lys Asn Ser Gln Pro Gln Cys Ile Val
325 330 335

Cys Val Asn Tyr Val Val Ser Gly Ile Ile Gln His Asp Leu Ile Phe

340 345 350

Ser Leu Gln Gln Thr Glu Cys Val Leu Lys Pro Val Glu Ser Ser Asp
355 360 365

Met Lys Met Thr Gln Leu Phe Thr Lys Val Glu Ser Glu Asp Thr Ser
370 375 380

Ser Leu Phe Asp Lys Leu Lys Lys Glu Pro Asp Ala Leu Thr Leu Leu
385 390 395 400

Ala Pro Ala Ala Gly Asp Thr Ile Ile Ser Leu Asp Phe Gly Ser Asn
405 410 415

Asp Thr Glu Thr Asp Asp Gln Gln Leu Glu Glu Val Pro Leu Tyr Asn
420 425 430

Asp Val Met Leu Pro Ser Pro Asn Glu Lys Leu Gln Asn Ile Asn Leu
435 440 445

Ala Met Ser Pro Leu Pro Thr Ala Glu Thr Pro Lys Pro Leu Arg Ser
450 455 460

Ser Ala Asp Pro Ala Leu Asn Gln Glu Val Ala Leu Lys Leu Glu Pro
465 470 475 480

Asn Pro Glu Ser Leu Glu Leu Ser Phe Thr Met Pro Gln Ile Gln Asp
485 490 495

Gln Thr Pro Ser Pro Ser Asp Gly Ser Thr Arg Gln Ser Ser Pro Glu
500 505 510

Pro Asn Ser Pro Ser Glu Tyr Cys Phe Tyr Val Asp Ser Asp Met Val
515 520 525

Asn Glu Phe Lys Leu Glu Leu Val Glu Lys Leu Phe Ala Glu Asp Thr
530 535 540

Glu Ala Lys Asn Pro Phe Ser Thr Gln Asp Thr Asp Leu Asp Leu Glu
545 550 555 560

Met Leu Ala Pro Tyr Ile Pro Met Asp Asp Asp Phe Gln Leu Arg Ser
565 570 575

Phe Asp Gln Leu Ser Pro Leu Glu Ser Ser Ser Ala Ser Pro Glu Ser
580 585 590

Ala Ser Pro Gln Ser Thr Val Thr Val Phe Gln Gln Thr Gln Ile Gln
595 600 605

Glu Pro Thr Ala Asn Ala Thr Thr Thr Thr Ala Thr Thr Asp Glu Leu
610 615 620

Lys Thr Val Thr Lys Asp Arg Met Glu Asp Ile Lys Ile Leu Ile Ala

625 630 635 640

Ser Pro Ser Pro Thr His Ile His Lys Glu Thr Thr Ser Ala Thr Ser
645 650 655

Ser Pro Tyr Arg Asp Thr Gln Ser Arg Thr Ala Ser Pro Asn Arg Ala
660 665 670

Gly Lys Gly Val Ile Glu Gln Thr Glu Lys Ser His Pro Arg Ser Pro
675 680 685

Asn Val Leu Ser Val Ala Leu Ser Gln Arg Thr Thr Val Pro Glu Glu
690 695 700

Glu Leu Asn Pro Lys Ile Leu Ala Leu Gln Asn Ala Gln Arg Lys Arg
705 710 715 720

Lys Met Glu His Asp Gly Ser Leu Phe Gln Ala Val Gly Ile Gly Thr
725 730 735

Leu Leu Gln Gln Pro Asp Asp His Ala Ala Thr Thr Ser Leu Ser Trp
740 745 750

Lys Arg Val Lys Gly Cys Lys Ser Ser Glu Gln Asn Gly Met Glu Gln
755 760 765

Lys Thr Ile Ile Leu Ile Pro Ser Asp Leu Ala Cys Arg Leu Leu Gly
770 775 780

Gln Ser Met Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys
785 790 795 800

Glu Val Asn Ala Pro Ile Gln Gly Ser Arg Asn Leu Leu Gln Gly Glu
805 810 815

Glu Leu Leu Arg Ala Leu Asp Gln Val Asn
820 825

<210> 331
<211> 92
<212> PRT
<213> Homo sapiens

<400> 331
Met Ala Tyr Arg Gly Gln Gly Gln Lys Val Gln Lys Val Met Val Gln
5 10 15

Pro Ile Asn Leu Ile Phe Arg Tyr Leu Gln Asn Arg Ser Arg Ile Gln
20 25 30

Val Trp Leu Tyr Glu Gln Val Asn Met Arg Ile Glu Gly Cys Ile Ile
35 40 45

```
Gly Phe Asp Glu Tyr Met Asn Leu Val Leu Asp Asp Ala Glu Glu Ile
    50                  55                  60

His Ser Lys Thr Lys Ser Arg Lys Gln Leu Gly Arg Ile Met Leu Lys
65                  70                  75                  80

Gly Asp Asn Ile Thr Leu Leu Gln Ser Val Ser Asn
                85                  90
```

<210> 332
<211> 235
<212> PRT
<213> Homo sapiens

<400> 332

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Met Asp Pro Ala Arg Pro Leu Gly Leu Ser Ile Leu Leu Leu Phe Leu
                5                   10                  15

Thr Glu Ala Ala Leu Gly Asp Ala Ala Gln Glu Pro Thr Gly Asn Asn
            20                  25                  30

Ala Glu Ile Cys Leu Leu Pro Leu Asp Tyr Gly Pro Cys Arg Ala Leu
        35                  40                  45

Leu Leu Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Arg Gln Phe
    50                  55                  60

Leu Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Tyr Thr Trp Glu
65                  70                  75                  80

Ala Cys Asp Asp Ala Cys Trp Arg Ile Glu Lys Val Pro Lys Val Cys
                85                  90                  95

Arg Leu Gln Val Ser Val Asp Asp Gln Cys Glu Gly Ser Thr Glu Lys
            100                 105                 110

Tyr Phe Phe Asn Leu Ser Ser Met Thr Cys Glu Lys Phe Phe Ser Gly
        115                 120                 125

Gly Cys His Arg Asn Arg Ile Glu Asn Arg Phe Pro Asp Glu Ala Thr
    130                 135                 140
Cys Met Gly Phe Cys Ala Pro Lys Lys Ile Pro Ser Phe Cys Tyr Ser
145                 150                 155                 160

Pro Lys Asp Glu Gly Leu Cys Ser Ala Asn Val Thr Arg Tyr Tyr Phe
                165                 170                 175

Asn Pro Arg Tyr Arg Thr Cys Asp Ala Phe Thr Tyr Thr Gly Cys Gly
            180                 185                 190

Gly Asn Asp Asn Asn Phe Val Ser Arg Glu Asp Cys Lys Arg Ala Cys
        195                 200                 205
```

Ala Lys Ala Leu Lys Lys Lys Lys Lys Met Pro Lys Leu Arg Phe Ala
    210   215   220

Ser Arg Ile Arg Lys Ile Arg Lys Lys Gln Phe
225   230   235

<210> 333
<211> 291
<212> PRT
<213> Homo sapiens

<400> 333
Met Gln Arg Ala Arg Pro Thr Leu Trp Ala Ala Ala Leu Thr Leu Leu
                  5   10   15

Val Leu Leu Arg Gly Pro Pro Val Ala Arg Ala Gly Ala Ser Ser Gly
             20   25   30

Gly Leu Gly Pro Val Val Arg Cys Glu Pro Cys Asp Ala Arg Ala Leu
         35   40   45

Ala Gln Cys Ala Pro Pro Pro Ala Val Cys Ala Glu Leu Val Arg Glu
     50   55   60

Pro Gly Cys Gly Cys Cys Leu Thr Cys Ala Leu Ser Glu Gly Gln Pro
 65   70   75   80

Cys Gly Ile Tyr Thr Glu Arg Cys Gly Ser Gly Leu Arg Cys Gln Pro
                 85   90   95

Ser Pro Asp Glu Ala Arg Pro Leu Gln Ala Leu Leu Asp Gly Arg Gly
            100   105   110

Leu Cys Val Asn Ala Ser Ala Val Ser Arg Leu Arg Ala Tyr Leu Leu
        115   120   125

Pro Ala Pro Pro Ala Pro Gly Asn Ala Ser Glu Ser Glu Glu Asp Arg
    130   135   140

Ser Ala Gly Ser Val Glu Ser Pro Ser Val Ser Ser Thr His Arg Val
145   150   155   160

Ser Asp Pro Lys Phe His Pro Leu His Ser Lys Ile Ile Ile Ile Lys
                165   170   175

Lys Gly His Ala Lys Asp Ser Gln Arg Tyr Lys Val Asp Tyr Glu Ser
            180   185   190

Gln Ser Thr Asp Thr Gln Asn Phe Ser Ser Glu Ser Lys Arg Glu Thr
        195   200   205

Glu Tyr Gly Pro Cys Arg Arg Glu Met Glu Asp Thr Leu Asn His Leu
    210   215   220

Lys Phe Leu Asn Val Leu Ser Pro Arg Gly Val His Ile Pro Asn Cys
225 230 235 240

Asp Lys Lys Gly Phe Tyr Lys Lys Lys Gln Cys Arg Pro Ser Lys Gly
245 250 255

Arg Lys Arg Gly Phe Cys Trp Cys Val Asp Lys Tyr Gly Gln Pro Leu
260 265 270

Pro Gly Tyr Thr Thr Lys Gly Lys Glu Asp Val His Cys Tyr Ser Met
275 280 285

Gln Ser Lys
290

<210> 334
<211> 582
<212> PRT
<213> Homo sapiens

<400> 334
Glu Ser Lys Gly Ala Ser Ser Cys Arg Leu Leu Phe Cys Leu Leu Ile
5 10 15

Ser Ala Thr Val Phe Arg Pro Gly Leu Gly Trp Tyr Thr Val Asn Ser
20 25 30

Ala Tyr Gly Asp Thr Ile Ile Ile Pro Cys Arg Leu Asp Val Pro Gln
35 40 45

Asn Leu Met Phe Gly Lys Trp Lys Tyr Glu Lys Pro Asp Gly Ser Pro
50 55 60

Val Phe Ile Ala Phe Arg Ser Ser Thr Lys Lys Ser Val Gln Tyr Asp
65 70 75 80

Asp Val Pro Glu Tyr Lys Asp Arg Leu Asn Leu Ser Glu Asn Tyr Thr
85 90 95

Leu Ser Ile Ser Asn Ala Arg Ile Ser Asp Glu Lys Arg Phe Val Cys
100 105 110

Met Leu Val Thr Glu Asp Asn Val Phe Glu Ala Pro Thr Ile Val Lys
115 120 125

Val Phe Lys Gln Pro Ser Lys Pro Glu Ile Val Ser Lys Ala Leu Phe
130 135 140

Leu Glu Thr Glu Gln Leu Lys Lys Leu Gly Asp Cys Ile Ser Glu Asp
145 150 155 160

Ser Tyr Pro Asp Gly Asn Ile Thr Trp Tyr Arg Asn Gly Lys Val Leu

```
                165                 170                 175

His Pro Leu Glu Gly Ala Val Val Ile Ile Phe Lys Lys Glu Met Asp
            180                 185                 190

Pro Val Thr Gln Leu Tyr Thr Met Thr Ser Thr Leu Glu Tyr Lys Thr
        195                 200                 205

Thr Lys Ala Asp Ile Gln Met Pro Phe Thr Cys Ser Val Thr Tyr Tyr
    210                 215                 220

Gly Pro Ser Gly Gln Lys Thr Ile His Ser Glu Gln Ala Val Phe Asp
225                 230                 235                     240

Ile Tyr Tyr Pro Thr Glu Gln Val Thr Ile Gln Val Leu Pro Pro Lys
                245                 250                 255

Asn Ala Ile Lys Glu Gly Asp Asn Ile Thr Leu Lys Cys Leu Gly Asn
            260                 265                 270

Gly Asn Pro Pro Pro Glu Glu Phe Leu Phe Tyr Leu Pro Gly Gln Pro
        275                 280                 285

Glu Gly Ile Arg Ser Ser Asn Thr Tyr Thr Leu Thr Asp Val Arg Arg
    290                 295                 300

Asn Ala Thr Gly Asp Tyr Lys Cys Ser Leu Ile Asp Lys Lys Ser Met
305                 310                 315                     320

Ile Ala Ser Thr Ala Ile Thr Val His Tyr Leu Asp Leu Ser Leu Asn
                325                 330                 335

Pro Ser Gly Glu Val Thr Arg Gln Ile Gly Asp Ala Leu Pro Val Ser
            340                 345                 350

Cys Thr Ile Ser Ala Ser Arg Asn Ala Thr Val Val Trp Met Lys Asp
        355                 360                 365

Asn Ile Arg Leu Arg Ser Ser Pro Ser Phe Ser Ser Leu His Tyr Gln
    370                 375                 380

Asp Ala Gly Asn Tyr Val Cys Glu Thr Ala Leu Gln Glu Val Glu Gly
385                 390                 395                     400

Leu Lys Lys Arg Glu Ser Leu Thr Leu Ile Val Glu Gly Lys Pro Gln
                405                 410                 415

Ile Lys Met Thr Lys Lys Thr Asp Pro Ser Gly Leu Ser Lys Thr Ile
            420                 425                 430

Ile Cys His Val Glu Gly Phe Pro Lys Pro Ala Ile Gln Trp Thr Ile
        435                 440                 445

Thr Gly Ser Gly Ser Val Ile Asn Gln Thr Glu Glu Ser Pro Tyr Ile
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450 455 460

Asn Gly Arg Tyr Tyr Ser Lys Ile Ile Ile Ser Pro Glu Glu Asn Val
465 470 475 480

Thr Leu Thr Cys Thr Ala Glu Asn Gln Leu Glu Arg Thr Val Asn Ser
485 490 495

Leu Asn Val Ser Ala Ile Ser Ile Pro Glu His Asp Glu Ala Asp Glu
500 505 510

Ile Ser Asp Glu Asn Arg Glu Lys Val Asn Asp Gln Ala Lys Leu Ile
515 520 525

Val Gly Ile Val Val Gly Leu Leu Leu Ala Ala Leu Val Ala Gly Val
530 535 540

Val Tyr Trp Leu Tyr Met Lys Lys Ser Lys Thr Ala Ser Lys His Val
545 550 555 560

Asn Lys Asp Leu Gly Asn Met Glu Glu Asn Lys Lys Leu Glu Glu Asn
565 570 575

Asn His Lys Thr Glu Ala
580

<210> 335
<211> 709
<212> PRT
<213> Homo sapiens

<400> 335
Met Ala Glu Val Glu Asp Gln Ala Ala Arg Asp Met Lys Arg Leu Glu
5 10 15

Glu Lys Asp Lys Glu Arg Lys Asn Val Lys Gly Ile Arg Asp Asp Ile
20 25 30

Glu Glu Glu Asp Asp Gln Glu Ala Tyr Phe Arg Tyr Met Ala Glu Asn
35 40 45

Pro Thr Ala Gly Val Val Gln Glu Glu Glu Glu Asp Asn Leu Glu Tyr
50 55 60

Asp Ser Asp Gly Asn Pro Ile Ala Pro Thr Lys Lys Ile Ile Asp Pro
65 70 75 80

Leu Pro Pro Ile Asp His Ser Glu Ile Asp Tyr Pro Pro Phe Glu Lys
85 90 95

Asn Phe Tyr Asn Glu His Glu Glu Ile Thr Asn Leu Thr Pro Gln Gln
100 105 110

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Leu Ile Asp Leu Arg His Lys Leu Asn Leu Arg Val Ser Gly Ala Ala
        115                 120                 125

Pro Pro Arg Pro Gly Ser Ser Phe Ala His Phe Gly Phe Asp Glu Gln
    130                 135                 140

Leu Met His Gln Ile Arg Lys Ser Glu Tyr Thr Gln Pro Thr Pro Ile
145                 150                 155                 160

Gln Cys Gln Gly Val Pro Val Ala Leu Ser Gly Arg Asp Met Ile Gly
                165                 170                 175

Ile Ala Lys Thr Gly Ser Gly Lys Thr Ala Ala Phe Ile Trp Pro Met
            180                 185                 190

Leu Ile His Ile Met Asp Gln Lys Glu Leu Glu Pro Gly Asp Gly Pro
        195                 200                 205

Ile Ala Val Ile Val Cys Pro Thr Arg Glu Leu Cys Gln Gln Ile His
    210                 215                 220

Ala Glu Cys Lys Arg Phe Gly Lys Ala Tyr Asn Leu Arg Ser Val Ala
225                 230                 235                 240

Val Tyr Gly Gly Gly Ser Met Trp Glu Gln Ala Lys Ala Leu Gln Glu
                245                 250                 255

Gly Ala Glu Ile Val Val Cys Thr Pro Gly Arg Leu Ile Asp His Val
            260                 265                 270

Lys Lys Lys Ala Thr Asn Leu Gln Arg Val Ser Tyr Leu Val Phe Asp
        275                 280                 285

Glu Ala Asp Arg Met Phe Asp Met Gly Phe Glu Tyr Gln Val Arg Ser
    290                 295                 300

Ile Ala Ser His Val Arg Pro Asp Arg Gln Thr Leu Leu Phe Ser Ala
305                 310                 315                 320

Thr Phe Arg Lys Lys Ile Glu Lys Leu Ala Arg Asp Ile Leu Ile Asp
                325                 330                 335

Pro Ile Arg Val Val Gln Gly Asp Ile Gly Glu Ala Asn Glu Asp Val
            340                 345                 350

Thr Gln Ile Val Glu Ile Leu His Ser Gly Pro Ser Lys Trp Asn Trp
        355                 360                 365

Leu Thr Arg Arg Leu Val Glu Phe Thr Ser Ser Gly Ser Val Leu Leu
    370                 375                 380

Phe Val Thr Lys Lys Ala Asn Ala Glu Glu Leu Ala Asn Asn Leu Lys
385                 390                 395                 400
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Gln Glu Gly His Asn Leu Gly Leu Leu His Gly Asp Met Asp Gln Ser
                405                 410                 415

Glu Arg Asn Lys Val Ile Ser Asp Phe Lys Lys Lys Asp Ile Pro Val
            420                 425                 430

Leu Val Ala Thr Asp Val Ala Ala Arg Gly Leu Asp Ile Pro Ser Ile
        435                 440                 445

Lys Thr Val Ile Asn Tyr Asp Val Ala Arg Asp Ile Asp Thr His Thr
    450                 455                 460

His Arg Ile Gly Arg Thr Gly Arg Ala Gly Glu Lys Gly Val Ala Tyr
465                 470                 475                 480

Thr Leu Leu Thr Pro Lys Asp Ser Asn Phe Ala Gly Asp Leu Val Arg
                485                 490                 495

Asn Leu Glu Gly Ala Asn Gln His Val Ser Lys Glu Leu Leu Asp Leu
            500                 505                 510

Ala Met Gln Asn Ala Trp Phe Arg Lys Ser Arg Phe Lys Gly Gly Lys
        515                 520                 525

Gly Lys Lys Leu Asn Ile Gly Gly Gly Gly Leu Gly Tyr Arg Glu Arg
    530                 535                 540

Pro Gly Leu Gly Ser Glu Asn Met Asp Arg Gly Asn Asn Asn Val Met
545                 550                 555                 560

Ser Asn Tyr Glu Ala Tyr Lys Pro Ser Thr Gly Ala Met Gly Asp Arg
                565                 570                 575

Leu Thr Ala Met Lys Ala Ala Phe Gln Ser Gln Tyr Lys Ser His Phe
            580                 585                 590

Val Ala Ala Ser Leu Ser Asn Gln Lys Ala Gly Ser Ser Ala Ala Gly
        595                 600                 605

Ala Ser Gly Trp Thr Ser Ala Gly Ser Leu Asn Ser Val Pro Thr Asn
    610                 615                 620

Ser Ala Gln Gln Gly His Asn Ser Pro Asp Ser Pro Val Thr Ser Ala
625                 630                 635                 640

Ala Lys Gly Ile Pro Gly Phe Gly Asn Thr Gly Asn Ile Ser Gly Ala
                645                 650                 655

Pro Val Thr Tyr Pro Ser Ala Gly Ala Gln Gly Val Asn Asn Thr Ala
            660                 665                 670

Ser Gly Asn Asn Ser Arg Glu Gly Thr Gly Gly Ser Asn Gly Lys Arg
        675                 680                 685
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Glu Arg Tyr Thr Glu Asn Arg Gly Ser Ser Pro Ser Gln Ser Arg Arg
690 695 700

Asp Trp Gln Ser Ala
705

<210> 336
<211> 480
<212> PRT
<213> Homo sapiens

<400> 336
Met Ile Arg Ala Ala Pro Pro Pro Leu Phe Leu Leu Leu Leu Leu Leu
5 10 15

Leu Leu Leu Val Ser Trp Ala Ser Arg Gly Glu Ala Ala Pro Asp Gln
20 25 30

Asp Glu Ile Gln Arg Leu Pro Gly Leu Ala Lys Gln Pro Ser Phe Arg
35 40 45

Gln Tyr Ser Gly Tyr Leu Lys Ser Ser Gly Ser Lys His Leu His Tyr
50 55 60

Trp Phe Val Glu Ser Gln Lys Asp Pro Glu Asn Ser Pro Val Val Leu
65 70 75 80

Trp Leu Asn Gly Gly Pro Gly Cys Ser Ser Leu Asp Gly Leu Leu Thr
85 90 95

Glu His Gly Pro Phe Leu Val Gln Pro Asp Gly Val Thr Leu Glu Tyr
100 105 110

Asn Pro Tyr Ser Trp Asn Leu Ile Ala Asn Val Leu Tyr Leu Glu Ser
115 120 125

Pro Ala Gly Val Gly Phe Ser Tyr Ser Asp Asp Lys Phe Tyr Ala Thr
130 135 140

Asn Asp Thr Glu Val Ala Gln Ser Asn Phe Glu Ala Leu Gln Asp Phe
145 150 155 160

Phe Arg Leu Phe Pro Glu Tyr Lys Asn Asn Lys Leu Phe Leu Thr Gly
165 170 175

Glu Ser Tyr Ala Gly Ile Tyr Ile Pro Thr Leu Ala Val Leu Val Met
180 185 190

Gln Asp Pro Ser Met Asn Leu Gln Gly Leu Ala Val Gly Asn Gly Leu
195 200 205

Ser Ser Tyr Glu Gln Asn Asp Asn Ser Leu Val Tyr Phe Ala Tyr Tyr
210 215 220

His Gly Leu Leu Gly Asn Arg Leu Trp Ser Ser Leu Gln Thr His Cys
225 230 235 240

Cys Ser Gln Asn Lys Cys Asn Phe Tyr Asp Asn Lys Asp Leu Glu Cys
245 250 255

Val Thr Asn Leu Gln Glu Val Ala Arg Ile Val Gly Asn Ser Gly Leu
260 265 270

Asn Ile Tyr Asn Leu Tyr Ala Pro Cys Ala Gly Gly Val Pro Ser His
275 280 285

Phe Arg Tyr Glu Lys Asp Thr Val Val Val Gln Asp Leu Gly Asn Ile
290 295 300

Phe Thr Arg Leu Pro Leu Lys Arg Met Trp His Gln Ala Leu Leu Arg
305 310 315 320

Ser Gly Asp Lys Val Arg Met Asp Pro Pro Cys Thr Asn Thr Thr Ala
325 330 335

Ala Ser Thr Tyr Leu Asn Asn Pro Tyr Val Arg Lys Ala Leu Asn Ile
340 345 350

Pro Glu Gln Leu Pro Gln Trp Asp Met Cys Asn Phe Leu Val Asn Leu
355 360 365

Gln Tyr Arg Arg Leu Tyr Arg Ser Met Asn Ser Gln Tyr Leu Lys Leu
370 375 380

Leu Ser Ser Gln Lys Tyr Gln Ile Leu Leu Tyr Asn Gly Asp Val Asp
385 390 395 400

Met Ala Cys Asn Phe Met Gly Asp Glu Trp Phe Val Asp Ser Leu Asn
405 410 415

Gln Lys Met Glu Val Gln Arg Arg Pro Trp Leu Val Lys Tyr Gly Asp
420 425 430

Ser Gly Glu Gln Ile Ala Gly Phe Val Lys Glu Phe Ser His Ile Ala
435 440 445

Phe Leu Thr Ile Lys Gly Ala Gly His Met Val Pro Thr Asp Lys Pro
450 455 460

Leu Ala Ala Phe Thr Met Phe Ser Arg Phe Leu Asn Lys Gln Pro Tyr
465 470 475 480

<210> 337
<211> 543
<212> PRT
<213> Homo sapiens

```
<400> 337
Met Ala Ala Ala Lys Ala Glu Met Gln Leu Met Ser Pro Leu Gln Ile
                5                   10                  15

Ser Asp Pro Phe Gly Ser Phe Pro His Ser Pro Thr Met Asp Asn Tyr
            20                  25                  30

Pro Lys Leu Glu Glu Met Met Leu Leu Ser Asn Gly Ala Pro Gln Phe
        35                  40                  45

Leu Gly Ala Ala Gly Ala Pro Glu Gly Ser Gly Ser Asn Ser Ser Ser
    50                  55                  60

Ser Ser Ser Gly Gly Gly Gly Gly Gly Gly Gly Gly Ser Asn Ser Ser
65                  70                  75                  80

Ser Ser Ser Ser Thr Phe Asn Pro Gln Ala Asp Thr Gly Glu Gln Pro
                85                  90                  95

Tyr Glu His Leu Thr Ala Glu Ser Phe Pro Asp Ile Ser Leu Asn Asn
            100                 105                 110

Glu Lys Val Leu Val Glu Thr Ser Tyr Pro Ser Gln Thr Thr Arg Leu
        115                 120                 125

Pro Pro Ile Thr Tyr Thr Gly Arg Phe Ser Leu Glu Pro Ala Pro Asn
    130                 135                 140

Ser Gly Asn Thr Leu Trp Pro Glu Pro Leu Phe Ser Leu Val Ser Gly
145                 150                 155                 160

Leu Val Ser Met Thr Asn Pro Pro Ala Ser Ser Ser Ser Ala Pro Ser
                165                 170                 175

Pro Ala Ala Ser Ser Ala Ser Ala Ser Gln Ser Pro Pro Leu Ser Cys
            180                 185                 190

Ala Val Pro Ser Asn Asp Ser Ser Pro Ile Tyr Ser Ala Ala Pro Thr
        195                 200                 205

Phe Pro Thr Pro Asn Thr Asp Ile Phe Pro Glu Pro Gln Ser Gln Ala
    210                 215                 220

Phe Pro Gly Ser Ala Gly Thr Ala Leu Gln Tyr Pro Pro Pro Ala Tyr
225                 230                 235                 240

Pro Ala Ala Lys Gly Gly Phe Gln Val Pro Met Ile Pro Asp Tyr Leu
                245                 250                 255

Phe Pro Gln Gln Gln Gly Asp Leu Gly Leu Gly Thr Pro Asp Gln Lys
            260                 265                 270

Pro Phe Gln Gly Leu Glu Ser Arg Thr Gln Gln Pro Ser Leu Thr Pro
```

275 280 285

Leu Ser Thr Ile Lys Ala Phe Ala Thr Gln Ser Gly Ser Gln Asp Leu
290 295 300

Lys Ala Leu Asn Thr Ser Tyr Gln Ser Gln Leu Ile Lys Pro Ser Arg
305 310 315 320

Met Arg Lys Tyr Pro Asn Arg Pro Ser Lys Thr Pro Pro His Glu Arg
325 330 335

Pro Tyr Ala Cys Pro Val Glu Ser Cys Asp Arg Arg Phe Ser Arg Ser
340 345 350

Asp Glu Leu Thr Arg His Ile Arg Ile His Thr Gly Gln Lys Pro Phe
355 360 365

Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp His Leu Thr
370 375 380

Thr His Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys Asp Ile
385 390 395 400

Cys Gly Arg Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His Thr Lys
405 410 415

Ile His Leu Arg Gln Lys Asp Lys Lys Ala Asp Lys Ser Val Val Ala
420 425 430

Ser Ser Ala Thr Ser Ser Leu Ser Ser Tyr Pro Ser Pro Val Ala Thr
435 440 445

Ser Tyr Pro Ser Pro Val Thr Thr Ser Tyr Pro Ser Pro Ala Thr Thr
450 455 460

Ser Tyr Pro Ser Pro Val Pro Thr Ser Phe Ser Ser Pro Gly Ser Ser
465 470 475 480

Thr Tyr Pro Ser Pro Val His Ser Gly Phe Pro Ser Pro Ser Val Ala
485 490 495

Thr Thr Tyr Ser Ser Val Pro Pro Ala Phe Pro Ala Gln Val Ser Ser
500 505 510

Phe Pro Ser Ser Ala Val Thr Asn Ser Phe Ser Ala Ser Thr Gly Leu
515 520 525

Ser Asp Met Thr Ala Thr Phe Ser Pro Arg Thr Ile Glu Ile Cys
530 535 540

<210> 338
<211> 148
<212> PRT

<213> Homo sapiens

<400> 338
Pro Pro Ala Thr Ser Tyr Ala Pro Ser Asp Val Pro Ser Gly Val Ala
5 10 15

Leu Phe Leu Thr Ile Pro Phe Ala Phe Phe Leu Pro Glu Leu Ile Phe
20 25 30

Gly Phe Leu Val Trp Thr Met Val Ala Ala Thr His Ile Val Tyr Pro
35 40 45

Leu Leu Gln Gly Trp Val Met Tyr Val Ser Leu Thr Ser Phe Leu Ile
50 55 60

Ser Leu Met Phe Leu Leu Ser Tyr Leu Phe Gly Phe Tyr Lys Arg Phe
65 70 75 80

Glu Ser Trp Arg Val Leu Asp Ser Leu Tyr His Gly Thr Thr Gly Ile
85 90 95

Leu Tyr Met Ser Ala Ala Val Leu Gln Val His Ala Thr Ile Val Ser
100 105 110

Glu Lys Leu Leu Asp Pro Arg Ile Tyr Tyr Ile Asn Ser Ala Ala Ser
115 120 125

Phe Phe Ala Phe Ile Ala Thr Leu Leu Tyr Ile Leu His Ala Phe Ser
130 135 140

Ile Tyr Tyr His
145

<210> 339
<211> 196
<212> PRT
<213> Homo sapiens

<400> 339
Met Pro Gly Met Phe Phe Ser Ala Asn Pro Lys Glu Leu Lys Gly Thr
5 10 15

Thr His Ser Leu Leu Asp Asp Lys Met Gln Lys Arg Arg Pro Lys Thr
20 25 30

Phe Gly Met Asp Met Lys Ala Tyr Leu Arg Ser Met Ile Pro His Leu
35 40 45

Glu Ser Gly Met Lys Ser Ser Lys Ser Lys Asp Val Leu Ser Ala Ala
50 55 60

Glu Val Met Gln Trp Ser Gln Ser Leu Glu Lys Leu Leu Ala Asn Gln
65 70 75 80

Thr Gly Gln Asn Val Phe Gly Ser Phe Leu Lys Ser Glu Phe Ser Glu
85 90 95

Glu Asn Ile Glu Phe Trp Leu Ala Cys Glu Asp Tyr Lys Lys Thr Glu
100 105 110

Ser Asp Leu Leu Pro Cys Lys Ala Glu Glu Ile Tyr Lys Ala Phe Val
115 120 125

His Ser Asp Ala Ala Lys Gln Ile Asn Ile Asp Phe Arg Thr Arg Glu
130 135 140

Ser Thr Ala Lys Lys Ile Lys Ala Pro Thr Pro Thr Cys Phe Asp Glu
145 150 155 160

Ala Gln Lys Val Ile Tyr Thr Leu Met Glu Lys Asp Ser Tyr Pro Arg
165 170 175

Phe Leu Lys Ser Asp Ile Tyr Leu Asn Leu Leu Asn Asp Leu Gln Ala
180 185 190

Asn Ser Leu Lys
195

<210> 340
<211> 316
<212> PRT
<213> Homo sapiens

<400> 340
Met Ala Thr Phe Val Glu Leu Ser Thr Lys Ala Lys Met Pro Ile Val
5 10 15

Gly Leu Gly Thr Trp Lys Ser Pro Leu Gly Lys Val Lys Glu Ala Val
20 25 30

Lys Val Ala Ile Asp Ala Gly Tyr Arg His Ile Asp Cys Ala Tyr Val
35 40 45

Tyr Gln Asn Glu His Glu Val Gly Glu Ala Ile Gln Glu Lys Ile Gln
50 55 60

Glu Lys Ala Val Lys Arg Glu Asp Leu Phe Ile Val Ser Lys Leu Trp
65 70 75 80

Pro Thr Phe Phe Glu Arg Pro Leu Val Arg Lys Ala Phe Glu Lys Thr
85 90 95

Leu Lys Asp Leu Lys Leu Ser Tyr Leu Asp Val Tyr Leu Ile His Trp
100 105 110

Pro Gln Gly Phe Lys Ser Gly Asp Asp Leu Phe Pro Lys Asp Asp Lys

115 120 125

Gly Asn Ala Ile Gly Gly Lys Ala Thr Phe Leu Asp Ala Trp Glu Ala
130 135 140

Met Glu Glu Leu Val Asp Glu Gly Leu Val Lys Ala Leu Gly Val Ser
145 150 155 160

Asn Phe Ser His Phe Gln Ile Glu Lys Leu Leu Asn Lys Pro Gly Leu
165 170 175

Lys Tyr Lys Pro Val Thr Asn Gln Val Glu Cys His Pro Tyr Leu Thr
180 185 190

Gln Glu Lys Leu Ile Gln Tyr Cys His Ser Lys Gly Ile Thr Val Thr
195 200 205

Ala Tyr Ser Pro Leu Gly Ser Pro Asp Arg Pro Trp Ala Lys Pro Glu
210 215 220

Asp Pro Ser Leu Leu Glu Asp Pro Lys Ile Lys Glu Ile Ala Ala Lys
225 230 235 240

His Lys Lys Thr Ala Ala Gln Val Leu Ile Arg Phe His Ile Gln Arg
245 250 255

Asn Val Ile Val Ile Pro Lys Ser Val Thr Pro Ala Arg Ile Val Glu
260 265 270

Asn Ile Gln Val Phe Asp Phe Lys Leu Ser Asp Glu Glu Met Ala Thr
275 280 285

Ile Leu Ser Phe Asn Arg Asn Trp Arg Ala Cys Asn Val Leu Gln Ser
290 295 300

Ser His Leu Glu Asp Tyr Pro Phe Asn Ala Glu Tyr
305 310 315

<210> 341
<211> 422
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(422)
<223> n = A,T,C or G

<400> 341
gatganattn ttncnagaga gaggaagang ctattcagtt ggatgggatt aaatgcatca 60
caaataagag aacttagaga gaagtcggaa aagtttgcct tccaagcccg aagttaacag 120
aatgatgaaa cttatcatca attcattgta taaaaataaa gagattttcc tgagagaact 180
gatttcaaat gcttctgatg ctttagataa gataaggcta atatcactga ctgatgaaaa 240
tgctctttct ggaaatgagg aactaacagt caaaattaag tgtgataagg agaagacctg 300

ctgcatgtca cagacaccgg tgtaggaatg accagagaag agttggttaa aaaccttggt 360
accatagcca aatctgggac aagcgagttt ttaaacaaaa tgactgaagc acaggaagat 420
gg 422

<210> 342
<211> 472
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(472)
<223> n = A,T,C or G

<400> 342
ctggagaagg tgtgcagggg aaaccctgct gatgtcaccg aggccaggtt gtctttctac 60
tcgggacact cttcctttgg gatgtactgc atggtgttct tggcgctgna tgtgcaggca 120
cgactctgtt ggaagtgggc acggctgctg cgacccacag tccagttctt cctggtggcc 180
tttgccctct acgtgggcta cacccgcgtg tctgattaca aacaccactg gagcgatgtc 240
cttgttggcc tcctgcaggg ggcactggtg gctgccctca ctgtctgcta catctcagac 300
ttcctcaaag cccgaccccc acagcactgt ctgaaggagg aggagctgga acggaagccc 360
agcctgtcac tgacgttgac cctgggcgag gctgaccaca accactatgg atacccgcac 420
tcctcctcct gaggccggac cccgcccagg cagggagcta ctgtgagtcc ag 472

<210> 343
<211> 139
<212> DNA
<213> Homo sapien

<400> 343
gtcctgggcc ttccccttcc ctcaagccag ggctcctcct cctgtcgtgg gctcattgtg 60
accactggcc tctctacagc acggcctgtg gcctgttcaa ggcagaacca cgacccttga 120
ctcccgggtg gggaggtgg 139

<210> 344
<211> 235
<212> DNA
<213> Homo sapien

<400> 344
ctgcgggctc agcacagtag acatgactgg gatccccacc ttggacaacc tccagaaggg 60
agtccaattt gctctcaagt accagtcgct gggccagtgt gtttacgtgc attgtaaggc 120
tgggcgctcc aggagtgcca ctatggtggc agcatacctg attcaggtgc acaaatggag 180
tccagaggag gctgtaagag ccatcgccaa gatccggtca tacatccaca tcagg 235

<210> 345
<211> 458
<212> DNA
<213> Homo sapien

<400> 345
ctgtaaggtg ctattcagtc ctgtgaccct tattttggaa tgctcttcat tactgttgct 60
ctgttttgtg acttcctggg aaaccgccta ctttggtgtg gtgtcacctt gagctgtgca 120
cataggacac cagttttgac ttaacctaac aggcagtttt tatctctagc tttttcaagc 180

caggtattga gcagtttctt ggccaatggc ctgagaaacc acctgtccct gtcaaggggt 240
gattttattg gttttaagtg gggaagtaat cccatgtact tatttcttaa atacctagga 300
agttcttctt ggtggctcct cttggccctc ccctctttct cccccaaccc accatcctgc 360
aaggcaagga atggcctctc cctccacaga ggcaacggct gcagagggag cactgtggct 420
gccatcccag ttcctcttca aagccaaaca gacacgcg 458

<210> 346
<211> 525
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(525)
<223> n = A,T,C or G

<400> 346
ccagagcaca acgcctcacc atggactgga cctggaggat nntcttnnng gtggcagcag 60
ccacaggtgt ccactcccaa gcccaacttg tgcagtctgg ggctgaggag aagaagcctg 120
gggcctcagt gactatttct tgtaaggctt ctggatatat ncttactaaa tatactttac 180
attgggtgcg ccaggccccc cccggacaaa gacctgaatg ggtgggatgg atcaacactg 240
gcattgatac cgttaaatat tcacagaagt ttcaggacag agtctccatt acctgggact 300
catccgcgac cacagnctac ctgnanntga gtagcctgga atccgaagac acggctgtgt 360
attactgtgc gagacttang gcccgttcgc tgtggtggga cttaatgacg cttttgacat 420
ctggggccaa gggacagtgg tcaccgtctc ttcanggagt gcattcgccc caaccctttt 480
ccccctctct cctgtgaaga attccccgnc ggatacgagc agcgt 525

<210> 347
<211> 423
<212> DNA
<213> Homo sapien

<400> 347
ccagacgctg acttgtttct gagtccttaa gcaggaagga tttgaaatcc tggagcttgg 60
cagtcttgct cttcacctct aagccaatgt tgacccctte atctataaag tccacaactc 120
tccggaagtc atcctcacgg aactgtcgag aagttaaggc tggggcccca agccgcaggc 180
cgcccggtgt gatggcactt cggtctccag gacaggtgtt cttgttggca gtgatggata 240
caagctctag cacccgctca gcccgagctc catccaggcc cttgggccgc aggtccacca 300
gcaccaggtg gttgtcagta ccacctgata ccagtgagta gcctcgctct agcagggcat 360
ctgccatggc ccgagcattc ttcagaacct gcagggagta ctcccggaac atgggggtgc 420
agg 423

<210> 348
<211> 513
<212> DNA
<213> Homo sapien

<400> 348
cctctaggcc tgatgctctc agaggcaata gaagaaaagt aaaaggaagg tctcacttca 60
cagacaatga aaccctccta accctcttcc ccactaccca caactcccta cactgccaat 120
ctaaataaaa agaggacaat gcatgagtgt gagatacaca tacacacaca cacatacaca 180
cacacacacg cacagcttcc tttcagccaa agaactgcaa aatccttccc cggaaggagg 240
acaactggca acaccaatca aggcttggtg gtctaaggtg atggctggaa tcatgtgaga 300
ctggtaaaaa tccagggaga aaatgtttca ccttcagctc attcccaagt ctctatgaag 360

cccgccccac ttccacatag gggaactgtg gctctggggg cagcctctgc agctactcag 420
aataggtggg aggaggggct ggctttgagg ctgccttagc catgaggctc tttgcctagg 480
aatagctgga gatgggagct gcaggggct cag 513

<210> 349
<211> 231
<212> DNA
<213> Homo sapien

<400> 349
ccttatttct cttgtccttt cgtacaggga ggaatttgaa gtagatagaa accgacctgg 60
attactccgg tctgaactca gatcacgtag gactttaatc gttgaacaaa cgaaccttta 120
atagcggctg caccatcggg atgtcctgat ccaacatcga ggtcgtaaac cctattgttg 180
atatggactc tagagtagga ttgcgctgtt atccctaggg taacttgttc c 231

<210> 350
<211> 341
<212> DNA
<213> Homo sapien

<400> 350
ctgcccaagg gcgttcgtaa cgggaatgcc gaagcgtggg aaaaagggag cggtggcgga 60
agacggggat gagctcagga cagagccaga ggccaagaag agtaagacgg ccgcaaagaa 120
aaatgacaaa gaggcagcag gagagggccc agccctgtat gaggaccccc cagatcagaa 180
aacctcaccc agtggcaaac ctgccacacc caagatctgc tcttggaatg tggatgggct 240
tcgagcctgg attaagaaga aaggattaga ttgggtaaag gaagaagccc cagatatact 300
gtgccttcaa gagaccaaat gttcagagaa caaactacca g 341

<210> 351
<211> 256
<212> DNA
<213> Homo sapien

<400> 351
ggcgttgggg acggttgtag gacgtggctc tttattcgtg agttttccat ttacctccgc 60
tgaacctaga gcttcagacg ccctatggcg tccgcctcga cccaaccggc ggccttgagc 120
gctgagcaag caaaggtggt cctcgcggag gtgatccagg cgttctccgc cccggagaat 180
gcagtgcgca tggacgaggc tcgggataac gcctgcaacg acatgggtaa gatgctgcaa 240
ttcgtgctgc ccgtgg 256

<210> 352
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 352
cctttcttgt aagtgaagaa naaggaatgc agcaaagaag agttcgacat tggagtcctt 60
agttccatca ggatcccatt cgcagccttt agcatcatgt agaagcaaac tgcacctatg 120
gctgagatag gtgcaatgac ctacaagatt ttgtgttttc tagctgtcca ggaaaagcca 180

tcttcagtct tgctgacagt caaagagcaa gtgaaaccat ttccagccta aactacataa 240
aagcagccga accaatgatt aaagacctct aaggctccat aatcatcatt aaatatgccc 300
aaactcattg tgacttttta ttttatatac aggattaaaa tcaacattaa atcatcttat 360
ttacatgg 368

<210> 353
<211> 368
<212> DNA
<213> Homo sapien

<400> 353
ctgaggggtg gcagtaagca atgaggatgg gctataaagc tgttaactgg ctaagggcca 60
tccttgggca ggcatttcag acacatctgt agagagggca gtagcatctc cgataggcca 120
gctctgaagg aagcttaatg cttaatacag tcacactgca taaattagct tagaatgctc 180
tcttgggtaa aaaatattaa tagtgtatat gcacttgaag agcaaaattc ctcaagaaaa 240
aaagtttaat agcaaggagt ttccatcagt cccggtcttt gtgaggatta ccacaacaaa 300
cacttaaaag gatacaacag gtacttatta aatgctgcct tgccttttac ctcttccttt 360
tttttttt 368

<210> 354
<211> 380
<212> DNA
<213> Homo sapien

<400> 354
ccatggcttc tcacccagac agtctttctg ggcaacttgg ggaagcccct gttctgctca 60
agtctcaccc catggaagag gtgggggaag gggccttggg tttttcagga agacaggttg 120
gagagcacga gtcactacaa agcagtaaaa gtgaatggtg tctccagggg ctgggtccag 180
aacaccacgg agagccccag ccataaaggt gtgttccgcc tctggcctgc aggaatctct 240
ttgaatctct ttgattggtg gctccaagag caatgggaag tcaacagcca ggaggctgga 300
ctgggttccc tgggaccccg aggtcccaga gctgctgggc agtggttgtc ggcaaagaag 360
aaaggtccaa gagggtcagg 380

<210> 355
<211> 347
<212> DNA
<213> Homo sapien

<400> 355
ccagtggagg ggtgggggta tcgatcccgc cgggggctgg cttggttgct ggtgccctga 60
gcccttctct gcccgcctgg gtgttgcctt cactgatgga ggtaggcgtc cagccagatg 120
tcaccagact tcttcgggga cctgacgatg tccaccagcg cggtgaggaa gggcttcact 180
tcgtagctga ggccgtgctt ggcacacagc gacttgacca gcggggccac ccggctgtag 240
ttgtgtctcg gcatcctggg gaagaggtgg tgctcgatct ggaagttgag gtgcccgctg 300
aaccagttgg tgaaaagtga gggctccacg ttgcaggtgg ctgccag 347

<210> 356
<211> 157
<212> DNA
<213> Homo sapien

<400> 356
cctggagctg ctgaagactg ctattgggaa agctggctac actgataagg tggtcatcgg 60
catggacgta gcggcctccg agttcttcag gtctgggaag tatgacctgg acttcaagtc 120

tcccgatgac cccagcaggt acatctcgcc tgaccag 157

<210> 357
<211> 323
<212> DNA
<213> Homo sapien

<400> 357
ccatacaggg ctgttgccca ggccctagag gtcactcctc gtaccctgat ccagaactgt 60
ggggccagca ccatccgtct acttacctcc cttcgggcca agcacaccca ggagaactgt 120
gagacctggg gtgtaaatgg tgagacgggt actttggtgg acatgaagga actgggcata 180
tgggagccat tggctgtgaa gctgcagact tataagacag cagtggagac ggcagttctg 240
ctactgcgaa ttgatgacat cgtttcaggc cacaaaaaga aaggcgatga ccagagccgg 300
caaggcgggg ctcctgatgc tgg 323

<210> 358
<211> 555
<212> DNA
<213> Homo sapien

<400> 358
aaaaggtttc taaaacatga cggaggttga gatgaagctt cttcatggag taaaaaatgt 60
atttaaaaga aaattgagag aaaggactac agagccccga gttaatacca atagaagggc 120
aatgctttta gattaaaatg aaggtgactt aaacagctta aagtttagtt taaaagttgt 180
aggtgattaa aataatttga aggcgatctt ttaaaaagag attaaaccga aggtgattaa 240
aagaccttga aatccatgac gcagggagaa ttgcgtcatt taaagcctag ttaacgcatt 300
tactaaacgc agacgaaaat ggaaagatta attgggagtg gtaggatgaa acaatttgga 360
gaagatagaa gtttgaagtg gaaaactgga agacagaagt acgggaaggc gaagaaaaga 420
atagagaaga tagggaaatt agaagataaa aacatacttt tagaagaaaa aagataaatt 480
taaacctgaa aagtaggaag cagaagaaaa aagacaagct aggaaacaaa aagctaaggg 540
caaaatgtac accac 555

<210> 359
<211> 549
<212> DNA
<213> Homo sapien

<400> 359
ctgccaggct gaaaagaagc ctcagctccc acaccgccct cctcaccgcc cttcctcggc 60
agtcacttcc actggtggac cacgggcccc cagccctgtg tcggccttgt ctgtctcagc 120
tcaaccacag tctgacacca gagcccactt ccatcctctc tggtgtgagg cacagcgagg 180
gcagcatctg gaggagctct gcagcctcca cacctaccac gacctcccag ggctgggctc 240
aggaaaaacc agccactgct ttacaggaca gggggttgaa gctgagcccc gcctcacacc 300
cacccccatg cactcaaaga ttggatttta cagctacttg caattcaaaa ttcagaagaa 360
taaaaaatgg gaacatacag aactctaaaa gatagacatc agaaattgtt aagttaagct 420
ttttcaaaaa atcagcaatt ccccagcgta gtcaagggtg gacactgcac gctctggcat 480
gatgggatgg cgaccgggca agctttcttc ctcgagatgc tcttgctgct tgagagctat 540
tgctttggt 549

<210> 360
<211> 289
<212> DNA
<213> Homo sapien

<400> 360
tttaaatttt actagtgtta cttaatgtat attctaaaaa gagaatgcag taactaatgc 60
cctaaatgtt tgatctctgt ttgtcattac tttttcaaaa ttattttttt ctgtaaagta 120
taatatataa aacttcttgc ttaaattgaa tttctatatt agtggttaat tgcagtttat 180
taaagggatc attatcagta atttcatagc aactgttcta gtgttttgtg tttttaaaac 240
agaattagga atttgagata tctgattata tttttcatat gaatcacag 289

<210> 361
<211> 311
<212> DNA
<213> Homo sapien

<400> 361
ctgttcagta tggcaaaggg cagacttact ccttcatcca ctctgctgcc ttgatgaggt 60
gaacacactg gaataagatg gagggcagga tacctgccaa agcctgagga atgagatgat 120
ctgaaacaat tgggcaaagg ctggacattt caaaaagctg acttccaact gcagtttatg 180
ggtatagaat ttgatgcttc cctcaagtcc tgactgctct ttctgaggca gccaggctag 240
gccaagaaat gagctgctcc agcttctcca gagcacagca gcctcccagg gcctgtcagc 300
atctgcagca g 311

<210> 362
<211> 496
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(496)
<223> n = A,T,C or G

<400> 362
ccagtttcta aaanaatgca catttaaaga gaagcatcta ccacggcttt aaaacaaaac 60
aactctgaga tgaacaatat gtgttatact cagagattaa caatctcaat catacatact 120
gattctttca gacatttaat aaccactaca tttttttgca ttaatgaagt ttgactatat 180
gtgtaaaggg actaaatatt tttgcaacag cctgttcttt gttcattctt ttctggatag 240
cgtgtcctct gtattgcggt agatttatac attctgttgc ctaaatatgt gtgtaaaatg 300
agctgataaa ctggagtact acttaaaaaa aagtctgtga tttataagat gcatatgctt 360
tctatgtgaa tataagcttg tgcacaatgt ttaaaagaaa aacaatgaat tagaagagat 420
cccccgtccc ccagtctgac atatttcata cagaatgttt aaaagaaaaa ctctgctagt 480
cttggcaaac atttgg 496

<210> 363
<211> 673
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(673)
<223> n = A,T,C or G

<400> 363
ccaagaggga gataanacaa acttctcaaa caaaaagaaa agaaaaacga atgattcatc 60
tgctttaatc agtgtgatta atgcagcacc cattgccccg ggaaccgttt ctgctgtact 120

atctggatac taaaatgtta cggaagtagc tctttgttct ccctcactct gcccttagtt 180
aatagaaatt cagactcgcc aagtaaggct ttgtgcatag tgtcttcatg tcgcgtatag 240
ttgagcgcgt tcttagcagt tggcttcatg gacagctcat tagtgttttg acttttctta 300
cccagcgtta attgaattct tgctttaga caacttcctt tttgtagtgg tgaaccttgc 360
cctttagtac agttcaagtg aatctggata attgttcatc tttgctttag cttagatacc 420
atgtagtggt ctgtggctac aggaagctgg ttctgtctgc ttccacagtc tgcttaaaaa 480
actgtctgac ttcgtgaata tagagaccaa gtttaccact tctgatgaag agaccaatta 540
agattcattc ctcattctgt ttctttccag tgggagaaga gtccccatga aataagatga 600
aactgattcc atgcactagt acatgtaggc ttctcccttg cgcaaagctt aacaatttgt 660
aggaaacttt ggg 673

<210> 364
<211> 495
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(495)
<223> n = A,T,C or G

<400> 364
ccaaatgttt gcncaagact agcagagttt ttcttttaaa cattctgtat gaaatatgtc 60
agactggggg acgggggatc tcttctaatt cattgttttt cttttaaaca ttgtgcacaa 120
gcttatattc acatagaaag catatacatc ttataaatca cagacttttt tttaagtagt 180
actccagttt atcagctcat tttacacaca tatttaggca acagaatgta taaatctacc 240
gcaatacaga ggacacacta tccagaaaag aatgaacaaa gaacaggctg ttgcaaaaat 300
atttagtccc tttacacata tagtcaaact tcattaatgc aaaaaatgta gtggttatta 360
aatgtctgaa agaatcagta tgtatgattg agattgttaa tctctgagta taacacatat 420
tgttcatctc agagttgttt tgttttaaag ccgtggtaga tgcttctctt taaatgtgca 480
ttttttagaa actgg 495

<210> 365
<211> 291
<212> DNA
<213> Homo sapien

<400> 365
aactgacaag cccttgcgcc tgcctctcca ggatgtctac aaaattggtg gtattggtac 60
tgttcctgtt ggcccgagtg gagactggtg ttctcaaacc cggtatggtg gtcacctttg 120
ctccagtcaa cgttacaacg gaagtaaaat ctgtcgaaat gcaccatgaa gctttgagtg 180
aagctcttcc tggggacaat gtgggcttca atgtcaagaa tgtgtctgtc aaggatgttc 240
gtcgtggcaa cgttgctggt gacagcaaaa atgacccacc aatggaagca g 291

<210> 366
<211> 277
<212> DNA
<213> Homo sapien

<400> 366
ctggatggtg cctcagaagg tgcattctgc ttctgcaggg gcttgaaaca ccaaggcact 60
ccagggatcc tggagtcaaa gcagcagccc cggttgttgc actccttggg ggtgacatgg 120
gggtagcccg cagtccaccc tgtccttggc tggcacggca cactggtttg cagacaggcc 180
cacgtactcc tcagcagagc tggaggacaa gcaaggccag gaccagcccc agcatgcaga 240

gcgctctggc agccatgacc accgtgggct ccgggac 277

<210> 367
<211> 311
<212> DNA
<213> Homo sapien

<400> 367
ccagagctgc ggggcctcag tacacggagc tgttccggat gccacagcac agcaccatgc 60
tcaggatcat ctcgaagatc atgatcacag cgaccacgat ggcagcaatg ccgatgaggt 120
acagcttccc ggagaagagg tcatcgatct tctggtggca gtcctccttg aagaggttgc 180
tgatgatgtt gctgcccgag ggacacaaat tgttcttgag cactgaggtg gtcaaagcag 240
tcagtgtgct ggagccacag cagtcaagcg tctcgtggaa ggtcttcacc acagccttgg 300
cgttgttggc g 311

<210> 368
<211> 384
<212> DNA
<213> Homo sapien

<400> 368
ccaaaggggt ctctagctgc tgctctgctg ctcctgctca tggatgagtt tggcgatggg 60
gccggtgatg ccgcctatca aggtccagta ctcatcgaag ctgatgcgcc catcaggatt 120
ggcatccagg ttctggatga gcttatccgc agccttccgg ttccctgtgt ccgacagcat 180
gtggttcagc tctttctgga gcatctcgcg gaagctgctc ttgctgatct tgttcttgac 240
caggctgtac ctagacacat atttgtagaa gttttccacc aggacaatga ctgccttctc 300
cagctccgtg tagcaagtct gacatctccc tgcttcgcct gctggcgggg cctaaggcgg 360
gggccaagcc cagttacagc ccag 384

<210> 369
<211> 216
<212> DNA
<213> Homo sapien

<400> 369
ccaagtgcca ggtggctttc agcagcttcc tacgatcagc cgaagaaagc agaagctctg 60
gaggctgcca tcgagaacct caatgaagcc aagaactatt ttgcaaaggt tgactgcaaa 120
gagcgcatca gggacgtcgt ttacttccag gccagactct accataccct ggggaagacc 180
caggagagga accggtgtgc gatgctcttc cggcag 216

<210> 370
<211> 561
<212> DNA
<213> Homo sapien

<400> 370
ctggctcctt cttttgtggt cgtttggggg atgggctggt ttggggttta ggtgcagaga 60
atggtttggg gccactgcgt actggaccac tctgagcctt cagggcaggg ttcttgtgag 120
tcttcatgtc atcagataca tgtttcaggg catgtgtaat gctctccccc tgattaatct 180
gcgcgaacag tgctgagcgg gaagcagact catctgagcc tgaactggta gagactgggg 240
gaggaggggg gcctggtgga gggggaggag gacctgatcc ggcagagggt ccagatggca 300
gtccgctcag ttcttttgcc acaggccccg ttttgctcca ggccagtccg gtggtatgga 360
actccttaat gtaagcctgc agctctgtcc atatacttaa ataagctttg acccagtcta 420
catgcttctt atccacatct ttgtactctt tgaggactcg gtttgtataa aacatggcgg 480

catcattcat ttctttcgca taagggccag gcttgggagc catagccacc cagcccaggg 540
cctggatact ttcgctgaca g 561

<210> 371
<211> 518
<212> DNA
<213> Homo sapien

<400> 371
cccacttcca tcgctctctg gtgtgaggca cagcgagggc agcatctgga ggagctctgc 60
agcctccaca cctaccacga cctcccaggg ctgggctcag gaaaaaccag ccactgcttt 120
acaggacagg gggttgaagc tgagccccgc ctcacaccca cccccatgca ctcaaagatt 180
ggattttaca gctacttgca attcaaaatt cagaagaata aaaaatggga acatacagaa 240
ctctaaaaga tagacatcag aaattgttaa gttaagcttt ttcaaaaaat cagcaattcc 300
ccagcgtagt caagggtgga cactgcacgc tctggcatga tgggatggcg accgggcaag 360
ctttcttcct cgagatgctc tgctgcttga gagctattgc tttgttaaga tataaaaagg 420
ggtttctttt tgtctttctg taaggtggac ttccagcttt tgattgaaag tcctagggtg 480
attctatttc tgctgtgatt tatctgctga aagctcag 518

<210> 372
<211> 335
<212> DNA
<213> Homo sapien

<400> 372
ctggaggctg ggtgcaccct gcccagatcc acacctgtac cccggcggaa aggctcatgg 60
gcattgaaga cggtggtgaa aaagccaaag ggaaaagcac caacaccaaa tgagaagtgg 120
aagcccccgg tatcaccaaa tggctggaat ccccctctgc tctccggagc tggtctctgg 180
ccctgggggc ggggtggagt ttttaatctg ggatcctggg gcttctggct ccctcgccca 240
taaagcggga caaccttctc tctgctgatc ccagctttac atactggaca ctcttgccgt 300
tctggccgtg tctccagcca ctgatgaaga catgg 335

<210> 373
<211> 467
<212> DNA
<213> Homo sapien

<400> 373
ccactagctg aatcttgaca tggaaggttt tagctaatgc caagtggaga tgcagaaaat 60
gctaagttga cttaggggct gtgcacagga actaaaaggc aggaaagtac taaatattgc 120
tgagagcatc caccccagga aggactttac cttccaggag ctccaaactg gcaccacccc 180
cagtgctcac atggctgact ttatcctccg tgttccattt ggcacagcaa gtggcagtgt 240
ctccaccacc tatgatggtg atgcagcccc tagaagtggc tttcaccacc tcatccatga 300
gagctttggt tccccgggca aaagcttccc attcaaatac ccccacagga ccattccaca 360
caatctgctt agcccgagtg acagcctcag catacttctt gctgctttca ggaccacagt 420
ccaagcccat ccagccagca ggtacgccag aagccacagt ggcttgg 467

<210> 374
<211> 284
<212> DNA
<213> Homo sapien

<400> 374
tttccgtaaa agcgtgtaac aagggtgtaa atatttataa ttttttatac ctgttgtgag 60

acccgagggg cggcggcgcg gtttttatg gtgacacaaa tgtatatttt gctaacagca 120
attccaggct cagtattgtg accgcggagc cacaggggac cccacgcaca ttccgttgcc 180
ttacccgatg gcttgtgacg cggagagaac cgattaaaac cgtttgagaa actcctccct 240
tgtctagccc tgtgttcgct gtggacgctg tagaggcagg ttgg 284

<210> 375
<211> 307
<212> DNA
<213> Homo sapien

<400> 375
cctactcttc tccgtccatt gtactatctg cccgtggtgg ggatggcagt aggatcatat 60
ttgatgactt ccgagaagca tattattggc tccgtcataa tactccagag gatgcgaagg 120
tcatgtcctg gtgggattat ggctatcaga ttacagctat ggcaaaccga acaattttag 180
tggacaataa cacatggaat aatacccata tttctcgagt agggcaggca atggcgtcca 240
cagaggaaaa agcctatgag atcatgaggg agctcgatgt cagctatgtg ctggtcattt 300
ttggagg 307

<210> 376
<211> 650
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(650)
<223> n = A,T,C or G

<400> 376
ccattgnctn ctnacgtgat gtcatcatct gccaggtcat cttggcaaaa gtcggagcat 60
ttctcagtca ctgcaaagta gcccttctcg ttggagcacc ggaagagacg tgtgtgtttc 120
atgtactcgg catcgtcatc atagggcttc tgtgccccaa tgcccaccca gaagaagttc 180
tcaggctcct caccttcgtt gataacctgc ttgctgtagg aggtgtcaaa catggtgttc 240
aggatgtctt ctgccaactt ggcttcgtca gggtctgatg cccggcccac ccaggcatac 300
acgatgccct ggttgtcctc actctcaaag ggaaccttga ggatgaagca gaactcggag 360
ttgaggaggc tggagtcggt gttgatctgg atgcaccggg tgcagagggc gctgccgttg 420
gtgcggatct ggtagaggct gggctgttgg gcgccctgga ccgccttcct cttgccccgg 480
tggatgatga acttcctctt gaaatgggac aggaacttgg ggttctcctg ctgctgcgtc 540
atgcgtacca cctccagctt cccagggaag aggctctcga acttcttttg caggctgaag 600
gtgaaggtga cccacccata ttgggaggct ttcacggccc tgccagaagt 650

<210> 377
<211> 306
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(306)
<223> n = A,T,C or G

<400> 377
tctagatgca tgctcgagcg gccgccagtg tgatggganat ctgcagaatt cgcccttcga 60
gcggccgccc gggcaggttc gggtgctgcc ttcacctgcc aggcccttcc ccgctagctt 120

ggggcgagca gagctgcgtc cagtggaact aaagccgttc caggattatc aaaaactgag 180
cagcaacctt gggggacctg gatcatcacg gactcccca actggaaggt ccttctctgg 240
cctcaattcc cgtctcaagg ccacgccttc cacctacagt ggagtcttcc gcacccagcg 300
cgtcga 306

<210> 378
<211> 199
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(199)
<223> n = A,T,C or G

<400> 378
ccacangtgg cacttgggtg tggctcctct gttatttgtc ctcatgtgag aaagcagatc 60
atctccaaat cttgccattt gtatactttt ggtggagact tggatgtcat atcttctttg 120
ttttgggttt tcttccctag cttattttgt ggcttttaaa gaagtggatt gtattgtgag 180
atcctgtgat tcctggtgg 199

<210> 379
<211> 216
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(216)
<223> n = A,T,C or G

<400> 379
ccagggcang tcatcaagag gggcattgtc ttgcatgcgg cctgccgtgt ccaccagcac 60
cacgtcaaag ccttggttac gtgcaaaagc aatggcttcc atggcaatgc cagcagcatc 120
cttgccatag ccctttttcaa acaactgcac catggtgcgg ccaccatgct tctctggagg 180
gtgtagggca ctcaaacgcc gggtgtgtgt acgcag 216

<210> 380
<211> 555
<212> DNA
<213> Homo sapien

<400> 380
ccatgggcct tcctttccac taaaaggaat tccgaacagc aaaaagaagg tcttgagata 60
gtgaaaatgg tgatgatatc tttagaaggt gaagatgggt tggatgaaat ttattcattc 120
agtgagagtc tgagaaaact gtgcgtcttc aagaaaattg agaggcattc cattcactgg 180
ccctgccgac tgaccattgg ctccaatttg tctataagga ttgcagccta taaatcgatt 240
ctacaggaga gagttaaaaa gacttggaca gttgtggatg caaaaaccct aaaaaaagaa 300
gatatacaaa aagaaacagt ttattgctta aatgatgatg atgaaactga agttttaaaa 360
gaggatatta ttcaagggtt ccgctatgga agtgatatag ttcctttctc taaagtggat 420
gaggaacaaa tgaaatataa atcggagggg aagtgcttct ctgttttggg attttgtaaa 480
tcttctcagg gtcagagaag attcttcatg ggaaatcaag ttctaaaggc tttgccccaa 540
gagatgatga ggcag 555

<210> 381
<211> 406
<212> DNA
<213> Homo sapien

<400> 381
ctgcaccagg tgggcctcta ggtcccatta agcccattgg tccagggcca agtccaactc 60
cttttccatc atactgagca gcaaagttcc caccgagacc agggggccca ggaggaccag 120
gtggaccagg agggcctgtg ggaccatctt caccatctct gcctgggggg cctggtggac 180
ccctttctcc acgtggtcct ctatctccgg ctgggccctt tcttacagtt tcctcttgta 240
aagattggca tgttgctagg cataaggtta ctgcaagcag caacaaagtc cgcgtatcca 300
caaagctgag catgtctagc acttagacat gcagactcct tgtgtcgcag agcccctggg 360
tcaccggcgg aggtatcacc tggcgggcgc gggcatgcag tcgtgg 406

<210> 382
<211> 528
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(528)
<223> n = A,T,C or G

<400> 382
ctgagcagtt tgtgggtntn tcttcccgca agtttcagga agtattcaca aaagaaaaat 60
acatttttc ccccaggggt ggggcaagga cagtggagag agtgctagga aatgagtccc 120
ctgggaaagg ggaccgggcc gtgatgttaa atatctccgg ctcccaagtg actggatttg 180
cctaggacct tcagaccaac agacttcaga ccctcagacc tgccccgggg ccaggtggag 240
aaagtgaggg ccgtacaagg aagtgaaatt ctgagttgtt ggggctaagc ctgacccccct 300
ctccatgctc cccgccccaa cccactctgg cctcagtaga tttttttttc agttgtggtt 360
gttgcccagg ctggagtgca gtagcgccat cttggctcac tgcacctcca ccttccgggc 420
tcaagcgatt ctccagcctc agcctcctga gtagctagga ctgcaggtgc tccaccacgc 480
ccggctaatt tttgtatttt tagtagagat ggggtttccc catgttgg 528

<210> 383
<211> 335
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(335)
<223> n = A,T,C or G

<400> 383
ccatnttgag tctactcctg cgtcttgtgc cctagcaccc cgagaaccgt cagtttgagc 60
cagatggaag ctgagctgaa cacattacga tggatgatgg aaacataaga ctatcaagaa 120
atccaagtgg taatgggcga agtttattca gcatccggca atggacttat cgtagttggg 180
gaaacgggtg ttccgaataa tatcctggaa gttatcagga cacctatttt aaatataggc 240
ctgaattttg taaagtaata tttaaggtgg tccgtgataa ttaaataaaa tgcttaattc 300
atgtggcgaa aaaaaaaaaa naaaaaaaaa aaaaa 335

<210> 384

<211> 333
<212> DNA
<213> Homo sapien

<400> 384
agtccaatac ggctattggg gttgtagcag ctttcagagg aaattagtgg tctgggcttg 60
cctccagctc cccaggggca gccccagtag ctacactgtc cagacagcac aagaccaggc 120
tggtgtcacg tccatccgag cgctgcctca gggatcgata aagtttcact gcagaaagtc 180
tccactgcgg tatgctgaca tctgccctga accttcaccc tacagcatta caggctttaa 240
tcagattctg ctggaaagac acaggctgat ccacgtgacc tcttctgcct tcactgggct 300
ggggtgatcc ttggtgcctt tgtttccaca agg 333

<210> 385
<211> 343
<212> DNA
<213> Homo sapien

<400> 385
ctgtgacacc tcaggttgaa agggtcttcc tccttgaaca cccaccgagg ggcctggagc 60
aacagccagc cgatatggac ttctagctgc accgggtcac tgagggtgga gaggtttgtc 120
tggcacctgt actctccact gtcgtcgact gtggcagcgt caatgaagta gctcgaggcc 180
tggcttgaga tgaggctctc attgtgaaac cactgtgtgg aattgtcctc aggggagtag 240
gctccctggc acttcagagt cacactgtcc ttctcgagca ccctgtacca ttgaggctcc 300
aggaacacca cagcctttgg gagatcttca gtccgcatgc caa 343

<210> 386
<211> 244
<212> DNA
<213> Homo sapien

<400> 386
tattctttga ttcttggcaa ataggtgaga gaactaatag caaccaggca actgaggacg 60
aagtcaaaaa gtcggtaaca gaagaatgga atcagccaac ccacttgata agaaattgct 120
ccataaacca gcattgaact gattataaac ataagaacag agacggcaaa aagaacacag 180
gcattatcag ccattctctc agacgaatag taattaccga tgacttcata ctgaatgttg 240
acag 244

<210> 387
<211> 504
<212> DNA
<213> Homo sapien

<400> 387
atctggagtc cagcctcagg gatgcgctac tttccattct ctgcattgaa cattcgttct 60
gtcagcatcc gctccagctt cactgcatca gcggcaaact tgcggatccc gtcagagagc 120
ttctccacag ccatctggtc ctcgttgtgc aaccaacgga aagacttctc atccaggtgg 180
atttttttcca ggtcactggc ttgggccgcc ttggctgaga gcacaggcac cagcttggcg 240
ttgtcctgca gcagctctcc caggagcttg ggtgggatgg tgaggaagtc acagccggcc 300
agtgctttga tctcgcccgt gttgcggaag gaggcgccca tgacaatggt tttgtagcta 360
aacttcttgt agtagttgta gattttagtg acactcttta ccccagggtc ttccaggggc 420
tcataggatt tcttgtcggt gtttgccaca tgccaatcaa ggatgcgccc aacaaatggg 480
gagatgaggg tcacacccgc ctcg 504

<210> 388

<211> 450
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(450)
<223> n = A,T,C or G

<400> 388
gccaaagtgc tgcntgaatt ccactcccctt ggttttcgcc tgcccagcgt tgctgtttgc 60
gtggagggtg gggggagctc agtggcaggg aatcagcggt ccgtggggtc gtggggacgg 120
gaacatgtgc ccgaccgctc catcccctcc tcctccttag gatgcataac ctaccttgtc 180
tttttttttt taaattttnt ttccaggtan agtagctntt tgtacataaa naatacttga 240
aaaattaatt gtatgatgta tgaaaanaca nagtctccta gttttgtatn ttgttgtatg 300
actgccatga gttccaccaa aaagccactn tattttggtc tntgtgacat tttaaatgcg 360
tgacaaaagt gagcaaataa agngaggaan aaatntatnt atganataat atanattgta 420
ttgaaatcta aaaaaaaaaa aaaaaaaaaa 450

<210> 389
<211> 297
<212> DNA
<213> Homo sapien

<400> 389
cctgcacttg aacatggctt tggttttaag caacttctct accctgaccc tcctcctggg 60
acagcgtttc gggaggtttc ttggcctcac tgagagggat gtggagctgc tgtaccccgt 120
caaggagaag gtattctaca gcctgatgag ggagagcggc tacatgcaca tccagtgcac 180
caagcctgac accgtaggct ctgctctgaa tgactctcct gtgggtctgg ctgcctatat 240
tctagagaag ttttccacct ggaccaatac ggaattccga tacctggagg atggagg 297

<210> 390
<211> 223
<212> DNA
<213> Homo sapien

<400> 390
ctgggctgga gagttggtgc tggcaaaaca gtccttcccc tggggccggt tcttacccag 60
gtccagagaa accaacgcgg gatgtcagac ttcaccaaaa ggactttctg gttgcccctg 120
gctggcttcc tggaggcgtt cgcctctagt ttctcaggga tggagcgaga gcccagccag 180
agaacagtaa gaggagctgc tctcctatct gcactcaccc agg 223

<210> 391
<211> 365
<212> DNA
<213> Homo sapien

<400> 391
ctgaggaaga aatgaaaaaa gaccctgtcc ctcatggccc gcccactggc ctcctgtgaa 60
ctctgtcctg ttgccaaccc cagatgaagt cagccaaaaa gtgctttcca catcctctct 120
ctggggctgc ccagcctgac cgtaggggat ccactggcag agccaaggtg gatgctggtg 180
cctgaagctg gaagccagca ggacatgaga cccctcctgt agcaggaagt ggttctagaa 240
ctcccagcag aacagaacgg aaaaggagct gattggggat agaatgagtt ctgctaaaca 300
gccagatgct ctgagagagg tgacactgga ctgtctcgga ggtgtgtgca gatggctaca 360

ggtgg 365

<210> 392
<211> 302
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(302)
<223> n = A,T,C or G

<400> 392
ccaagagcta caatgagcag cgcatcanga cagaacgtgc aggtttttga gttccagttg 60
actgcagagg acatgaaagc catagatggc ctagacagaa atctccacta ttttaacagt 120
gatagttttg ctagccaccc taattatcca tattcagatg aatattaaca tggagagctt 180
tgcctgatgt ctaccagaag ccctgtgtgt ggatggtgac gcagaggacg tctctatgcc 240
ggtgactgga catatcacct ctacttaaat ccgtcctgtt tagcgacttc agtcaactac 300
ag 302

<210> 393
<211> 213
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(213)
<223> n = A,T,C or G

<400> 393
ccaataatca agnacaaana ctggatttga ggatggatca gttctgaaac agtttctttc 60
tgaaacagag aaaatgtccc ctgaagacag agcaaaatgc tttggaaaga atgaggccat 120
acaggcagcc catgatgccg tggcacagga aggccaatgt cgggtagatg acaaggtgaa 180
tttccatttt attctgttta acaacgtgga tgg 213

<210> 394
<211> 334
<212> DNA
<213> Homo sapien

<400> 394
cctacccata atccagagag gcttgcccag aggaggacta cgtgggggac gtgccaccag 60
aaccctactt gggggcggga tgtcactccg aggtcaaaac ctgctccgag gtggacgagc 120
cgtagctccc cgaatgggct taagaagagg tggtgttcga ggtcgtggag gtcctgggag 180
agggggccta gggcgtggag ctatgggtcg tggcggaatc ggtggtagag gtcggggtat 240
gataggtcgg ggaagagggg gctttggagg ccgaggccga ggccgtggac gagggagagg 300
tgcccttgct cgccctgtat tgaccaagga gcag 334

<210> 395
<211> 174
<212> DNA
<213> Homo sapien

<400> 395
ccagatgagg aaaaaaatta ggaaggagat gaagttttcc aaatttcatg gtatatgctg 60
cacttcccca accttcactc tccatgtagc ctactgggtc tactattcca caaagtggct 120
caacctccaa atgacctctg gtttacccct attaaaatcc caaaggactt tcag 174

<210> 396
<211> 140
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(140)
<223> n = A,T,C or G

<400> 396
ctgcaaagcc ttgtgtaacn ttctccagca tttggaccca gtacgtgaaa gcccacaaca 60
cgttcattgt ctttagtatt acagattatt tttgcataac atttgttgtt atctcttgac 120
ggaatcgtcc attccaatgg 140

<210> 397
<211> 318
<212> DNA
<213> Homo sapien

<400> 397
cctcgcctgg agggcccccg ggcagcacag ggaggacgag cttgtccagc agagggtctg 60
gcagagggtc ccgcagaggt ttgggcaggg ggtctgacat ccctggctcc tgctctggct 120
ctggctgccg ggatttgcac aggcccaggt gcatacagat gccgtttgag tcagtctggt 180
tctggaagta gtcgatgacc agggggaagt agtcgtcaag cacttggttg cactggggca 240
tgagcagctt caaggggagg acgttgcact cctgctccag gaacttcctc atcgtgtcct 300
ggaaaatggc ctccttgg 318

<210> 398
<211> 517
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(517)
<223> n = A,T,C or G

<400> 398
ccttncttcg ccatccattc atcgaccctc tccagcactt gctgcaggct tggctgacca 60
tccaccatgg cttgaataat cccggtgagc tctgtacaga atggggtaag ctgtggatgg 120
actacaggct ggacatacat gtgaaaggta gactcaatct ccatggtccg gccatttagc 180
tttaggatgg ggaactcgat gatttcctga ggatgaatct gtggcttgtc gcacgtggcc 240
tcaaagtcca gcactaaaaa gtagtgatac ctctggagag ggaaggacac cattgccgcc 300
atggatgcgc caaagccgtg ggccgccagc tttctggtgg atatggagca gaactccgga 360
acaccacagg gagaaaataa gtgggagccc agcacttttc ttgctcttga aagtaaatac 420
gaagaaaatc gagctgctcc agtctgtaaa ggtgctagca ttgaacatcc agaagcatct 480
aaaactctcc ttacttcgaa gatgccaaga ccggcag 517

<210> 399
<211> 329
<212> DNA
<213> Homo sapien

<400> 399
ccaacctcag gcaacgggtg gagcagtttg ccagggcctt ccccatgcct ggttttgatg 60
agcattgaag gcacctggga aatgaggccc acagactcaa agttactctc cttcccccta 120
cctgggccag tgaaatagaa agcctttcta tttttggtg cgggagggaa gacctctcac 180
ttagggcaag agccaggtat agtctccctt cccagaattt gtaactgaga agatcttttc 240
tttttccttt tttcggtaac aagacttaga aggagggccc aggcactttc tgtttgaacc 300
cctgtcatga tcacagtgtc agagacgcg 329

<210> 400
<211> 451
<212> DNA
<213> Homo sapien

<400> 400
ctggcttcac tgctcaggtg attatcctga accatccagg ccaaataagc gccggctatg 60
cccctgtatt ggattgccac acggctcaca ttgcatgcaa gtttgctgag ctgaaggaaa 120
agattgatcg ccgttctggt aaaaagctgg aagatggccc taaattcttg aagtctggtg 180
atgctgccat tgttgatatg gttcctggca agcccatgtg tgttgagagc ttctcagact 240
atccaccttt gggtcgcttt gctgttcgtg atatgagaca gacagttgcg gtgggtgtca 300
tcaaagcagt ggacaagaag ctgctggagc tggcaaggtc accaagtctg cccagaaagc 360
tcagaagcta aatgaatatt atccctaata cctgccaccc cactcttaat cagtggtgga 420
agaacggctc agaactgttt gtttcaattg g 451

<210> 401
<211> 180
<212> DNA
<213> Homo sapien

<400> 401
ccaggaagca ggccagggga ttggcagcac tgcccagcac cacagccagg tggtaggcca 60
gacgcccgta gggtaagcag gaaaagctct gcacggcagg cagcacgcca ttggtcagcg 120
cgttggtggc ggccaacagg cccagcaggc aggcactgcg ggctgataga agctgatagg 180

<210> 402
<211> 385
<212> DNA
<213> Homo sapien

<400> 402
ccaggccacc tgtgcggggc tcctcgatgt ggaaggttcg ggtgaggaga ttgtagaagg 60
agccgtagca cacggccacc acagtgcacg tgaggcagat cacgttgtag ggcatgctga 120
agtccggtgt cggcaggttc accagcagcg gctccgtgta gagccgcaca aagtagttag 180
agccatcaga gactgggaac aggctgttga agaggggact ctcttcccag tccactggct 240
tggctgctac catgctgggc acaagggcgc tgaggacaga tgggctgaca tagaagccat 300
ggttaggatc tggcgtgtac tcggtccact tcagcagcgc ccgctcaaac tggatggaaa 360
ccttggtgac tgagttggcc ggcag 385

<210> 403
<211> 440

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(440)
<223> n = A,T,C or G

<400> 403
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ctgtttaacc agnaacccgg ggggtcaccc cccacagaat gtacatgaaa cactagagga      60
ctgcatgttt ttccctgaga gaagcgtaag acaaacagaa gtcaaaaagt agtcactggg     120
agcgccatcc ttctaagcaa atcctccctt tccctttttgg aggatttgcc cgaactacgt    180
agccagtcag cacttagacc acctgcctcc tccccccccct ataaacccac cactcccctc    240
ctcctttccc aaaccacttg gggtgtccta agccctcact gccccaagcc caaaatatca     300
gctaagatcc ttgtcagtat ttccacagtc atacctaatg aattgggaag tggggcccct     360
aaaaaccaat tcacatctat gcacttgttt ccactggatt tggcagacag gcttttttag     420
ttaccgtaac cagatcttaa                                                 440
```

<210> 404
<211> 239
<212> DNA
<213> Homo sapien

<400> 404
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cctacgaaaa actcccggcc ggtgaagaga acgtcagtgc catccagcgt cgcgttctcg      60
tctcctattt ccacaattcg gagccccagg tcttgcaggg ctttgcggac tccatcgacc     120
tctggcctac gagcggggct ccagggccgc gtgattaggg ccgtgtcccc ttggatcacg     180
gccgtgtcgc caagcagcgg tcccagcggc aatgactcct caggtggcag ttctagcag      239
```

<210> 405
<211> 261
<212> DNA
<213> Homo sapien

<400> 405
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ctggagaggc agcccttcac cggatgccca gctccgtgcc cctgcgggcc ccagcacagt      60
ttaccttctc cccccacggc ggtcccatct actctgtgag ctgttccccc ttccacagga     120
atctcttcct gagcgctggg actgacgggc atgtccacct gtactccatg ctgcaggccc     180
ctcccttgac ttcgctgcag ctctccctca agtatctgtt tgctgtgcgc tggtccccag     240
tgcggccctt ggtttttgca g                                               261
```

<210> 406
<211> 641
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(641)
<223> n = A,T,C or G

<400> 406
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ctgctcccgg gcntggtggc agcaagtaga catcgggcct gtgcagggcc accccccttgg     60
gccgggagat ggtctgcttc agtggcgagg gcaggtctgt gtgggtcacg gtgcacgtga    120
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```
acctctcccc ggaattccag tcatcctcgc agatgctggc ctcacccacg gcgctgaaag     180
tggcattggg gtggctctcg gagatgttgg tgtgggtttt cacagcttcg ccattctggc     240
gggtccagga gatggtcacg ctgtcatagg tggtcaggtc tgtgaccagg caggtcaact     300
tggtggactt ggtgaggaag atgctggcaa aggatggggg gatggcgaag acccggatgg     360
ctgtgtcttg atcggggaca cacatggagg acgcattctg ctggaaggtc aggcccctgt     420
gatccacgcg gcaggtgaac atgctctggc tgagccagtc gctctctttg atggtcagtg     480
tgctggtcac cttgtaggtc gtgggcccag actctttggc ctcagcctgc acctggtccg     540
tggtgacgcc agaccccacc tgcttcccct cgcgcagcca ggacacctga atctgccggg     600
gactgaaacc cgtggcctgg cagatgagct tggacttgcg g                         641

      <210> 407
      <211> 173
      <212> DNA
      <213> Homo sapien

      <400> 407
ccaggtactg gcacaatcat gtctggatgg gggtggtggt gtcctgtagg cagagaaaca      60
ggaaattgtc gtagtcagta tcgagcagcg tggcctcgtt cgccaccgta tagttgatct     120
tgaacttctt tggattctca gtcttctctc caaggacctt cttctcaaca cag            173

      <210> 408
      <211> 165
      <212> DNA
      <213> Homo sapien

      <400> 408
ccactgtctg cagccatggc agaaagtgct caaagtccag caccttcaca ttcatctcat      60
cactcttggg gttccccagg accttgagca cctcggcgtt ggtagggttc tggcccaggg     120
ccctcatcac atccccacac tggctgtaca ggatcttgcc atcac                     165

      <210> 409
      <211> 329
      <212> DNA
      <213> Homo sapien

      <400> 409
ctgtagcttc tgtgggactt ccactgctca ggcgtcaggc tcagatagct gctggccgcg      60
tacttgttgt tgctttgttt ggagggtgtg gtggtctcca ctcccgcctt gacggggctg     120
ctatctgcct tccaggccac tgtcacggct cccgggtaga agtcacctat gagacacacc     180
agtgtggcct tgttggcttg aagctcctca gaggagggcg ggaacagagt gaccgagggg     240
gcagccttgg gctgaccaag gacggtcagc ttggtccctc cgccaaatac cgccggataa     300
gcaccactgt tgtctgctga ttgacagaa                                       329

      <210> 410
      <211> 235
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(235)
      <223> n = A,T,C or G

      <400> 410
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tgggcactca tccaagtgat gaataatcat caagggtttg ttgcttgtct tggatttata 180
tagagctttt tcatatgtct gagtccagat gagttggtca ccccaacctc tggag 235

<210> 411
<211> 294
<212> DNA
<213> Homo sapien

<400> 411
aattaaggga agatgaagat gataaaacag ttttggatct tgctgtggtt ttgtttgaaa 60
cagcaacgct tcggtcaggg tatcttttac cagacactaa agcatatgga gatagaatag 120
aaagaatgct tcgcctcagt ttgaacattg accctgatgc aaaggtggaa gaagagcctg 180
aagaagaacc tgaagagaca gcagaagaca caacagaaga cacagagcaa gacgaagatg 240
aagaaatgga tgtgggaaca gatgaagaag aagaaacagc aaaggaatct acag 294

<210> 412
<211> 433
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(433)
<223> n = A,T,C or G

<400> 412
cctgagaagc cagaggcagg tggagagggg gtggaaagtg agcagcgggc tgggctggag 60
ccgcacacgc tctcctccca tgttaaatag cacctttaga aaaattcaca agtccccatc 120
cacaaaaaaa aaaanaanaa aaatttcagg gantaaaaat anactttgaa caaaaaggaa 180
catttgntgg cctggggggg catctnantt tntntagcnc cagngattcc ctccccnccc 240
cacccatcac atanatgtaa cacctttggt ntaaaatggg gagccgtttc caccntgccc 300
ccntccccgc ccccaggcag ttgccccggn gacacntcaa gacaggancg aggtagtntt 360
tcancancac agttncacaa ggaacagaac agtntctccc gcccagccct gcggcacaag 420
ggattgacac gcn 433

<210> 413
<211> 494
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(494)
<223> n = A,T,C or G

<400> 413
ccttatttct cttgtcnctt cgtacaggga ggaatttgaa gtagatagaa accgacctgg 60
attactccgg tctgaactca gatcacgtag gactttaatc gttgaacaaa cgaaccttta 120
atagcggctg caccatcggg atgtcctgat ccaacatcga ggtcgtaaac cctattgttg 180
atatggactc tagaatagga ttgcgctgtt atccctaggg taacttgttc cgttggtcaa 240
gttattggat caattgagta tagtagttcg ctttgactgg tgaagtctta gcatgtactg 300
ctcggaggtt gggttctgct ccgaggtcgc cccaaccgaa atttttaatg caggtttggt 360

agtttaggac ctgtgggttt gttaggtact gtttgcatta ataaattaaa gctccatagg 420
gtcttctcgt cttgctgtgt tatgcccgcc tcttcacggg caggtcaatt tcactggtta 480
aaagtaagag acag 494

<210> 414
<211> 294
<212> DNA
<213> Homo sapien

<400> 414
ctgggcggat agcaccgggc atattttgga atggatgagg tctggcaccc tgagcagtcc 60
agcgaggact tggtcttagt tgagcaattt ggctaggagg atagtatgca gcacggttct 120
gagtctgtgg gatagctgcc atgaagtaac ctgaaggagg tgctggctgg taggggttga 180
ttacagggtt gggaacagct cgtacacctg ccattctctg catatactgg ttagtgaggt 240
gagcctggcg ctcttctttg cgctgagcta aagctacata caatggcctt gtgg 294

<210> 415
<211> 421
<212> DNA
<213> Homo sapien

<400> 415
ccttgcccct gccctcccac gaatggttaa tatatatgta gatatatatt ttagcagtga 60
cattcccaga gagccccaga gctctcaagc tcctttctgt cagggtgggg ggttcagcct 120
gtcctgtcac ctctgaggtg cctgctggca tcctctcccc catgcttact aatacattcc 180
cttccccata gccatcaaaa ctggaccaac tggcctcttc ctttcccctg ggaccaaaat 240
ttaggggcct cagtccctca ccgccatgcc ctggcctatt ctgtctctcc ttcttccccc 300
tggcctgttc tgtctctgag ctctgtgtcc tccgttcatt ccatggctgg gagtcactga 360
tgctgcctct gccttctgat gctggactgg ccttgcttct acaagtatgc ttctcccaca 420
g 421

<210> 416
<211> 342
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(342)
<223> n = A,T,C or G

<400> 416
ccactttctt tcccacnctg gaaggcggca tctatgactt cattggggag ttcatgaagg 60
ccagcgtgga tgtggcagac ctgataggtc taaaccttgt catgtcccgg aatgccggca 120
agggagagta caagatcatg gttgctgccc tgggctgggc cactgctgag cttattatgt 180
cccgctgcac tcccctatgg gtcggagccc ggggcattga gtttgactgg aagtacatcc 240
agatgagcat agactccaac atcagtctgg tccattacat cgtcgcgtct gctcaggtct 300
ggatgataac acgctatgat ctgtaccaca ccttccggcc gg 342

<210> 417
<211> 389
<212> DNA
<213> Homo sapien

<400> 417
tattaattag gttcttaaga catttagaac accaatttgt gaggataaat tccattcgtc 60
agagcaaaca cagatcgcag gtagccctgg agctgaggaa tagctttgat tttggtaaa 120
atttgtgagt ccacagcttt ctgatcaatc ttgcgctgct ccgtaatctc atatttctct 180
ttttctgtgt cgaagatctc accttcctgg tgtctgggct tccgcagctt cttcttcttg 240
aagtaagcat cagtaagatg ttttgggatt tttacattgc tgatatcgat tttggttgaa 300
gtggcaatga caaatttctg gtgtgttctt cgtagaggaa ctcgattgag gaccagaggt 360
ccagtcacaa gtaataagcc actagccag 389

<210> 418
<211> 343
<212> DNA
<213> Homo sapien

<400> 418
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aagccgaatt cctggtctgg ggcaccaacg tccaaggggg ccacatcgat gatgggcagg 120
cgggaggtct tggtggtttt gtattcaatc actgtcttgc cccaggctcc ggtgtgactc 180
gtgcagccat cgacagtgac gctgtaggtg aagcggctgt tgccctcggc gcggatctcg 240
atctcgttgg agccctggag gagcagggcc ttcttgaggt tgccagtctg ctggtccatg 300
taggccacgc tgtttttgca gtggtaggtg atgttctggg agg 343

<210> 419
<211> 255
<212> DNA
<213> Homo sapien

<400> 419
cctagcaaga gaatcaccaa atttatggag agttaacagg ggtttaacag gaaggaagtg 60
cctttagtaa gttctcaagc cagaggctgg aggcagcagc taaatcagag gacagcatcc 120
tcagtgaaag tgagccattc ggggtggcat gtcactccag gaataaacac aacttagaaa 180
caaatgattt cgtaggatag cacagtgaca tggtgcactg tgaacctgag gccactgtgt 240
caaactgtgc actgg 255

<210> 420
<211> 261
<212> DNA
<213> Homo sapien

<400> 420
cttctgatga taaccaaccc ctagctacca ctctgtattc atcaggggag gggtataaac 60
cccacatgca agaagaaccc ttgcccccag tgtcaaatgg gatggggatg ctagagttat 120
agtaaagggg aaaccctatg taagctgtta acagagttca caggggtagg gataacccct 180
gttctccagc tcccaaatgt gctcactttc ccagcttctt catccgttca tcaatgctgg 240
caaagttccc ctcaactgtg g 261

<210> 421
<211> 179
<212> DNA
<213> Homo sapien

<400> 421
ccttcctgtt gttgtttcaa atgctgcttg atttctcgta acagatctgc atctatgtaa 60
tacctttctt cagatctgac tgctccaaaa tgattctgca tcctgatttg agacatcaat 120

tcatttagtc ggcccttgaa ctgagtaggt gcatttagtt caccctgaat cgtatccag 179

<210> 422
<211> 424
<212> DNA
<213> Homo sapien

<400> 422
cgaggtccaa atctgatctg cagatgcaga agattcgaca gaagctgcag actaaacagg 60
ctgccatgga gaggtctgga aaagctaagc aactgcgagc acttaggaaa tacgggaaga 120
aggtgcaaac ggaggttctt cagaagaggc agcaggagaa agcccatatg atgaatgcta 180
ttaagaaata tcagaaaggc ttctctgata aactggattt ccttgaggga gatcagaaac 240
ctctggcaca gcacaagaag gcaggagcca aaggccagca gatgaggaag gggcccagtg 300
ctaaacgacg gtataaaaac cagaagtttg gttttggtgg aaagaagaaa ggctcaaagt 360
ggaacactcg ggagagctat gatgatgtat ctagcttccg ggccaagaca gctcatggca 420
gagg 424

<210> 423
<211> 256
<212> DNA
<213> Homo sapien

<400> 423
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gcttttggga gactggaaaa gggaaggtga ctgaaggctg tcaggattct tcaaggagaa 120
tgaatactgg gaatcaagac aagactatac cttatccata ggcgcaggtg cacaggggga 180
ggccataaag atcaaacatg catggatggg tcctcacgca gacacaccca cagaaggaca 240
ctagcctgtg cacgcg 256

<210> 424
<211> 330
<212> DNA
<213> Homo sapien

<400> 424
ccagccgcat gggagtggag gcagtcatcg ccttgctaga ggccaccccg gacaccccag 60
cttgcgtcgt gtcactgaac gggaaccacg ccgtgcgcct gccgctgatg gagtgcgtgc 120
agatgactca ggatgtgcag aaggcgatgg acgagaggag atttcaagat gcggttcgac 180
tccgagggag gagctttgcg ggcaacctga acacctacaa gcgacttgcc atcaagctgc 240
cggatgatca gatcccaaag accaattgca acgtagctgt catcaacgtg ggggcacccg 300
cggctgggat gaacgcggcc gtacgctcag 330

<210> 425
<211> 333
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(333)
<223> n = A,T,C or G

<400> 425
ctgctccatg gnctcaaagt cagcaccacc cacacccaca atgatcactg acatgggcag 60

gttcgaggca cgcaccacag cctcacgtgt ggcttccaca tccgtcacag caccatcagt 120
cagnagaaac agnatgaagt attgngaggc antcccctga tgtgcagcct gggctgcaaa 180
cctggacctg cccgggcggc cgctcgaaag ggcgaattcc agcacactgg cggccgttac 240
tagnggatnc aganctcggt acnaagcttg gcagtaatca tggtcatagc tgtttcctgt 300
gagcggntgg gatgaacgcg gccgtacgct cat 333

<210> 426
<211> 411
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(411)
<223> n = A,T,C or G

<400> 426
gggtgttcat catgaggatt gcttctgcca tggagctgat ggacgtgggc aggttgctga 60
gaaggtgggg tggaagtgag tgccgggggt gggtgagtgc cctggtcttg ttcatagggg 120
agcctttccc tagcagtgga acgctgtggt cattttctct agcatattcc cttgggaagt 180
ctagatttgc tattaatctg gctgagaatc taagttctgt gccttagaga cagtttgcac 240
tttcccatat tgtgcctggg acagccatat gatttttttt cccaccaaac aagtatgcaa 300
acagaaacca gttcaaaggg ggatggtgta aaagatgagg cagtanaaat gcctttgaat 360
ggttttctgt agctaattct ctttaaattt tgtcctgctt tttttcttta t 411

<210> 427
<211> 450
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(450)
<223> n = A,T,C or G

<400> 427
acgtgtacaa gtttgaactg gatacctctg aaagaaagat tgaatttgac tctgcctctg 60
gcacctacac tctctactta atcattggag atgccacttt gaagaaccca atcctctgga 120
atgtggctga tgtggncatc aagttccctg aggaagaagc tccctcgact gtcttgtccc 180
agaacctttt cactccaaaa caggaaattc agcacctgtt ccgcgagcct gagaagaggc 240
ccccccaccgt ggtgtccaat acattcactg ccctgatcct ctcgccgttg cttctgctct 300
tcgctctgtg gatccggatt ggtgccaatg tctccaactt cacttttgct cctagcacga 360
ttatatttca cctgggacat gctgctatgc tgggactcat gtatgtctac tggactcagc 420
tcaacatgtt ccagaccttg aagtacctgg 450

<210> 428
<211> 377
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(377)
<223> n = A,T,C or G

<400> 428
cagggctata gtgcgctatg ttgatctggt gttcatgcta agttccgcat caatatggtg 60
acttcttggg agtgggggac caccaggttg cctaaggagg ggtgaacctg cctacgttgg 120
aaatagagct ggncaaaact cctgtgctca tcagtagtag aattgcacct gtgaatagcc 180
nccgccctcc agcatgggca acataacaag accctgcctc ttaaagataa aaattggaaa 240
acactngtag gaaaaaaagg gtgnttggtc taaataaatn tggattgggn ataaatgacn 300
caaaactatc atgaatttga aagcntttct aatttcttga aagtctgaaa aaagttaaan 360
cncaatttta tctnaaa 377

<210> 429
<211> 206
<212> DNA
<213> Homo sapien

<400> 429
gttgctcctc caaagaaggt tggcttcaag gccgtgtcca gggacccacg agcagaggca 60
ctgggggca agggatctcc aagggggcaa gggatcccta aagggggtag ctcacaggtg 120
agggggttta gggcccctct agggagcgcc tgaggccata cattcaagag tgtccctggt 180
gaggcccagg gaagagccag gactgg 206

<210> 430
<211> 473
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(473)
<223> n = A,T,C or G

<400> 430
ccttatttnt cttgtccttt cgtacaggga ggaatttgaa gtagatagaa accgacctgg 60
attactccgg tctgaactca gatcacgtag gactttaatc gttgaacaaa cgaaccttta 120
atagcggctg caccatcggg atgtcctgat ccaacatcga ggtcgtaaac cctattgttg 180
atatggactc tagaatagga ttgcgctgtt atccctaggg taacttgttc cgttggtcaa 240
gttattggat caattgagta tagtagttcg ctttgactgg tgaagtctta gcatgtactg 300
ctcggaggtt gggttctgct ccgaggtcnc cccanccgaa atttttaatg caggtttggt 360
agntnaggac ctgtgggttt gttaggtact gggtgcatta ataaattaaa gctccatagg 420
gtcttctcgt cttgctgtgt tatgcccncc tcttcacggg caggtcaatt tca 473

<210> 431
<211> 215
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(215)
<223> n = A,T,C or G

<400> 431
cctgtatnaa gctanaaaaa gactaccagc ccgggatcac cttcatcgtg gtgcagaaga 60
ggcaccacac ccggctcttc tgcactgaca agaacgagcg ggttgggaaa agtggaaaca 120

ttccagcagg cacgactgtg gacacgaaaa tcacccaccc caccgagttc gacttctacc 180
tgtgtagtca cgctggcatc caggggacaa gcagg 215

<210> 432
<211> 391
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(391)
<223> n = A,T,C or G

<400> 432
ccagcactgc cacaaacttt ttcagggcca ccaggcgctg cccttccagg accgggaacc 60
tgcccacttc tatccgcagg atgtagtgca gtgcagattc caggtcagcc atgtagatcc 120
tggagcgatc tgccaatttc caaacagtgg gagctatctt gttagcagtg gttggtgcaa 180
ctgtggtctg ggcagcctcc ctggtgagcc cagagagtct ctgcaggtaa gcggtataga 240
aggacctgga ttccatgagc acggggactc gggagacgga gccattccgg aacagcaggt 300
agcaagaggg gaagtcggtg acaccaaact ttctcaccac attggcctct gtgttcagca 360
ccctgcgcac cgccacncct ttgtgctggg a 391

<210> 433
<211> 420
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(420)
<223> n = A,T,C or G

<400> 433
ctgtagcttc tgtgggactt ccactgctca ggcgtcaggc tcagatagct gctggctgcg 60
tacttgttgt tgctttgttt ggagggtgtg gtggtctcca ctcccgcctt gacggggctg 120
ctatctgcct tccaggccac tgtcacggct cccgggtaga agtcacttat gagacacacc 180
agtgtggcct tgttggcttg aagctcctca gaggagggcg ggaacagagt gaccgagggg 240
gcagccttgg gctgacgtag gacggttagt ttggnccctc cgccgaatgc cgcanttcta 300
ctgtcccaca cctgacagta atagtcancc tcatcttcgg cttgggctct gctgatggtc 360
agggtggccc gtgntccccg agttggagcc agggaatcnc tcagggatcc canagggccn 420

<210> 434
<211> 239
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(239)
<223> n = A,T,C or G

<400> 434
ccaaccanga gagaagggat cgcctggtgc ccagggccca ccaggagctc caggccccact 60
tgggattgct gggatcactg gagcacgggg tcttgcagga ccaccaggca tgccaggtcc 120

taggggaagc cctggccctc agggtgtcaa gggtgaaagt gggaaaccag gagctaacgg 180
tctcagtgga gaacgtggnc cccctggacc ccagggtctt cctggtctgg ctggtncag 239

<210> 435
<211> 415
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(415)
<223> n = A,T,C or G

<400> 435
ctgtccaatg gcaacaggac cctcactcta ttcaatgtca caagaaatga cgcaagagcc 60
tatgtatgtg gaatccanaa ctcagtgagt gcaaaccgca gtgacccagt caccctggat 120
gtcctctatg ggccggacac ccccatcatt tccccccag actcgtctta cctttcggga 180
gcaaacctca acctctcctg ccactcggcc tctaacccat ccccncanta ttcttggcgt 240
atcaatggga taccgcagca acacacacaa gttctnttta tcgccaaaat cacgccaaat 300
aataacggga cctatgcctg tttagggntn taacttggnt actggccgca anaattccat 360
agtcaagagc atcacagnct ctgcatntgg aacttctcct ggctntcaga cctgn 415

<210> 436
<211> 152
<212> DNA
<213> Homo sapien

<400> 436
ccaggattga caggccatcc attcacagcc aggagatgct gggccagtcc ctccaagagg 60
tctccgtcat ggcagtgatg aaaacctaac agggtggccc cctgtgccag ctcaggtgac 120
tggagcccga gggcctgaca ggttcccagc ag 152

<210> 437
<211> 174
<212> DNA
<213> Homo sapien

<400> 437
ccaggtactg gcacatcatg ctctggatgg gggtggtggt gtcctgtaag cagagaaaca 60
ggaaattgtc gtagtcagta tcgagcagct gtggcctcgt tcgccaccgt atagttgatc 120
ttgaacttct ttggattctc agtcttctct ccaaggacct tcttctcaac acag 174

<210> 438
<211> 485
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(485)
<223> n = A,T,C or G

<400> 438
ccacggccct ctcggccctc tcgctgggag cggagcagcg aacagaatcc atcattcacc 60

gggctctcta ctatgacttg atcagcagcc cagacatcca tggtacctat aaggagctcc 120
ttgacacggt caccgccccc cagaagaacc tcaagagtgc ctcccggatc gtctttgaga 180
agaagctgcg cataaaatcc agctttgtgg cacctctgga aaagtcatat gggaccaggc 240
ccagagtcct gacgggcaac cctcgcttgg acctgcaaga gatcaacaac tgggtgcagg 300
cgcagatgaa agggaagctc gccnggtcca caaaggaaat tcccgatgag atcagcattc 360
tccttctcgg ngtggcgcac ttcaaggggc agngggtaac aaagtttgac tncagaaang 420
acttccctcg aggatttcta cttggatgaa gagaggaccg tgagggtccc catgatgtcg 480
gaccc 485

<210> 439
<211> 317
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(317)
<223> n = A,T,C or G

<400> 439
gggccgtctt cccctccatc gtggggcgcc ccaggcacca gggcagtgat ggtgggcatg 60
ggtcagaagg attcctatgt gggcgacgag gcccagagca agagaggcat cctcaccctg 120
aagtacccca tcgagcacgg catcgncacc aactgggacg acatggagaa aatctggcac 180
cacaccttct acaatgagct gcgtgtggct cccgaggagc accccgtgct gctgaccgag 240
gccccccctga accccaaggc caaccgcnag aagatgaccc agatcatgtt tgagaccttc 300
agcaccccag ccatgta 317

<210> 440
<211> 338
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(338)
<223> n = A,T,C or G

<400> 440
ccanaaagac ttcccaggga agatgcttgg ctctctgctc caaggtgggc catggtatag 60
ggccctcgaa gggcttgtgg ctggggtgat cccagggggc attgctcaaa gtgcacagga 120
ggtggcagca gggtcaggcg agttcctgtt ccagggacat caggagggag ggtagaagcc 180
tagggagtgt gcgaggctgc tgggatgagg gagctcaggg gctaccagct aaccagcctc 240
agctcaatgg tttctccatc cttgggtctg tagtcagcaa taccttgcaa cagtggggtg 300
ttggggtctc ggagaagctg ccagaactcc ctttctcc 338

<210> 441
<211> 505
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(505)
<223> n = A,T,C or G

<400> 441
ccacacagan tcaccaagcc acagacttgt cttccacaag cacgttctta tcttagccac 60
gaagtgacca agccacacgt actaaaggtt gaactcaaag atatgtacag ggtattaaac 120
aaataccaag gggaacagtt aacttcaata caaggtcgaa atcagcaaca agttctacaa 180
tccagngctg atatcagata caagcttcaa ggacaatttc ttttcgaagg cttattccag 240
tttcgngagg ctagcatgag gtgtgtgcat ttgccagggg caaatttcta ttctcaatta 300
acccatgcag caaatgctac ncatggtgcn gagtccgttt agaagcattt gcggtggacg 360
atggaggggc ccgactcgtc ttactcctgc ttgctaatcc acnngngctg gaaggnggac 420
agtgaggcca cggatggagc caccnatcca caccgagtnc ttgcgctctg gggtgcgat 480
natnttgatc ttcatggtgc tgggc 505

<210> 442
<211> 386
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(386)
<223> n = A,T,C or G

<400> 442
cgccaggtga tacctccgcc ggtgacccag gggctctgcg acacaaggag tctgcatgtc 60
taagtgctag acatgctcag ctttgtggat acgcggactt tgttgctgct tgcagtaacc 120
ttatgcctag caacatgcca atctttacaa gaggaaaccg taagaaaggg cccagccgga 180
gatagaggac cacgtggaga aaggggtcca ccaggccccc caggcagaga tggtgaagat 240
ggtcccacag gccctcctgg tccacctggt cctcctggcc cccctggtct cgatgggaac 300
tttgctgctc agtatgatgg aaaaggaggg nggacttggc cctggaccaa tgggcttaat 360
gggacctana ggcccacctg gtgcag 386

<210> 443
<211> 404
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(404)
<223> n = A,T,C or G

<400> 443
cctccctctc agagcttgcc ccagggactc tctggccctc agggttcaat gtattctgac 60
caaggccaag ctttcctggg gctcagggaa aatcacactt tgctacccga agctgtatcc 120
cctcagatgc caggaaggcc gtgatcatct gactccaccc tcctgagaca cattctctcc 180
ctgactgtcc tgttctaagt cagcggagca ccttaggatg gaggggtgga ggcgaggcca 240
ngatgcagcc tctgtgaaca ggtgcctgga ggctgggaaa tgaccctgag agggcaggac 300
acagcnaccg ngggcttaag gtgagggngg agagcaagnt tggcccactt tacaattcta 360
gntcagagcc ancccctaac atggngggca tttattcatt tcgg 404

<210> 444
<211> 318
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(318)
<223> n = A,T,C or G

<400> 444
catgggctat agtgcgctat gttgatctgg tgttcatgct aagttccgca tcaatatngc 60
gacttcttng gagtggggga ccaccangtt gcctaaggag gggtgaacct gcctacgttg 120
gaaatagagc tggtcaaaac tcctgtgctc atcagtagta gaattgcacc tgtgaatagc 180
caccgccctc cagcntgggc aacatagcaa gaccctgcct cttaagataa aaattggaaa 240
acactggtan gaaaaaaagg ctgtttggtc taaanaagtc tggatngggt ataaatgaca 300
cnaanctatc atgactnt 318

<210> 445
<211> 418
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(418)
<223> n = A,T,C or G

<400> 445
ccagtccaac ctgctcctca ttattgtata aatgagcaga atcaatatgg cggaagccag 60
cttcaattgc caatttggtg gcctctaaag ctttactttt aggaacctct gcaggcgcat 120
aggtgccaaa tcccaggaca ggcatgaagt gaccatcatt cagcttcaca cactgatatt 180
tcgaatccat ttctgtcact agcctggctg gcaaatgttt ctttcttcct ccctcacagg 240
ctataagagc aatgagctgg caacgcccct gagcacactg tctgctgntt aaccaatggc 300
atgtgagagg agggacagag gcagtcttac acaagctgtg ataaaaattg catncagttc 360
aaccagtttc ttacnttatt ctaatgngna ggaagtgtgn gaagagcaca aagtcaga 418

<210> 446
<211> 361
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(361)
<223> n = A,T,C or G

<400> 446
ctgtccaatn acaacaggac cctcactcta ctcagtgtca caaggaatga tgtaggaccc 60
tatgagtgtg gaatccanaa cgaattaant gttgaccaca gcgacccagt catcctgaat 120
gtcctctatg gcccagacga ccccaccntt tccccctcat acacctatta ccgtccaggg 180
gtgaacctca gcntctcctg ncatgcagcc tctaacccac ctgcacagta tccttggctg 240
attgatggga acntccagna acacnacaca agagctcttt atctccancn tnactganaa 300
gaacagcgcg actctatncc ttccaggggg ggggggtggg gnntgnggac cttnccgggc 360
c 361

<210> 447
<211> 321

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(321)
<223> n = A,T,C or G

<400> 447
ccagganant ggttccccaa aggggacctc acccgccccg agctctggag ccgctgacgc 60
tcgcatccag gacatttgag atgggaatcc aaataggcta cttgnaaaag acgtgctgca 120
ngcagccctg gagagactca tggagttcat tgtacattac tccatctacc gaggcagcgc 180
atggcatgac tnaacggctt gnaacaaaca canaaattac caccacaaac attcaggaac 240
caaatataat ctgctatggt cacaccacag acaatgcagg aagaggcttt ttattgctng 300
ngtgngtttt caaatcatgt t 321

<210> 448
<211> 325
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(325)
<223> n = A,T,C or G

<400> 448
ccagcttcaa ctttttagta tagaagatac aggatcacaa aaaggagact acgctttgca 60
aacatagcat caaaattcaa cttttctctt tgcagtttat ccatggngtc agcatacctt 120
gcaagggaag ctacttacat caaataactt ttctatatac atttcctcat tgaccttttc 180
tcaaagaata tcttggtttt gccgaacaaa cataatatag gngtctgcca gatccattcc 240
tggtttctgt ngtgaaggaa aagcaggggg aacaaaataa tatcagggtc tcaatngtga 300
nattattatt taatcatacc ctgan 325

<210> 449
<211> 123
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(123)
<223> n = A,T,C or G

<400> 449
cattaatntt ggaagcgatg gtgtggatta catcagtgtt agggcatggt gtggatatta 60
ttacattann attggaagcg atggtgtgga ttacatcagt gatagggcac ggtgtggata 120
tta 123

<210> 450
<211> 328
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

<400> 450
ctggcaattt tgagctgccg gttatacacc aaaatgttct gttcagtacc tagctctgct 60
cttttatatt gctttaaatt tttaaagaaa ttatattgca tggatgtggt tatttgtgca 120
tatttttttaa caatgcccaa tctgtatgaa taatgtaaac ttcgattttt ttttaaaaaa 180
attagatttt agctggagct tttgactaat gtaaagtaaa tgccaaacta ccgacttgat 240
ngggatgttt ttgtaangtt aattttctaa gactttttca catccaaagt gatgctttgc 300
tttgggtttt aactgtttca acntnggn 328

<210> 451
<211> 209
<212> DNA
<213> Homo sapien

<400> 451
ctgccttgtt tcaacagaca tgcaaagatc ctaggagaca gtccccatag accttcagac 60
attaaaaagg gagccgtaca gtttgtttga agcacttcgt cttacccatt tatgcagggg 120
ccccaggaaa cttacacaca gccagaatga ggttcccaaa ggacttacat taattatggc 180
tcttgcttcc tttcacaaat gagctgagg 209

<210> 452
<211> 457
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(457)
<223> n = A,T,C or G

<400> 452
ctgtctantc ccttcaagag ctgtttatag aagcttgaga atggggtaaa aatttctgct 60
agcaaaatca agttcttttt gaaattttat cagtaatcca gaatttagta gtccatgcct 120
tctcactcag catttagaaa taaaaatgtg gtttcttaaa cgtatatcct ttcatgtata 180
tttccacatt tttgtgcttg gatataagat gtatttcttg tagtgaagtt gttttgtaat 240
ctactttgta tacattctaa ttatattatt tttctatgta ttttaaatgn atatggctgt 300
ttaatctttg aagcattttg ggcttaagat tgccagcacc acacatcaga tgcagtcatt 360
gttgctatca gtgtggaatc tgatagagtc tngactccgg ccacttggag ttgtgnactc 420
caaagctaag gacagtgatg aggaagatgg catgtgg 457

<210> 453
<211> 277
<212> DNA
<213> Homo sapien

<400> 453
ccaattgatt tgatggtaag ggagggatcg ttgacctcgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg 180
gcatacagga ctaggaagca gataaggaaa atgactacga gggcgtgatc atgaaaggtg 240

ataagctctt ctatgatagg ggaagtagcg tcttgta 277

<210> 454
<211> 198
<212> DNA
<213> Homo sapien

<400> 454
gttaaaagat agtaggggga tgatgctaat aatcaggctg tgggtggttg tgttgattca 60
aattatgtgt tttttggaga gtcatgtcag tggtagtaat ataattgttg ggacgattag 120
ttttagcatt ggagtaggtt taggttatgt acgtagtcta ggccatatgt gttggagatt 180
gagactagta gggctagg 198

<210> 455
<211> 608
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(608)
<223> n = A,T,C or G

<400> 455
ctgagcaagc taaggaccag gggcaactag accctaataa tgngtacttt tgaaaatgat 60
acaaactacc ttggttgtaa gaagtgcagg ttgaacactt taggagaaca gtcttcaaac 120
tggcaattca aaatttccca ttatatgtga ataaaattgg aaggatgtta aatgtccatg 180
gaaagttact cttgtaagtt aggatgcctt atactgaggc tttanaatga aagtacactt 240
cacaaatgga atagtgaaca taaattacca gaagtcaaga taatagtcat actagtaagg 300
taagcaaggt aaattccctt atacacaaaa attattttga tgaccttttt caataatgaa 360
tctgaaatga agtgttttaa aaagctccct aaacacaaaa cgaacataaa actgcttaat 420
aactttagag ctcatgtaat attcttgctg aaaacagtta ctgaaattac cagcgaaatg 480
atggaatatc tttaaagcag gncactcngt ataatctgga ataatttcat ttgctaactt 540
ttaagaagta ttctctggac tataaatcnt gggcaaatag acttccactt tattattacc 600
ccaaatta 608

<210> 456
<211> 467
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(467)
<223> n = A,T,C or G

<400> 456
cctggacctg tgtaaacctt caaacactct tttttacatt aggtcgtgaa gttaaatttt 60
ttactgtttc tgtgctacag actcttcaaa gggaaatagt taagtcaatt tcaaagaaaa 120
tgaccagcac atttttaaaa cattagaaat gatttgactt tgactatcta ctgccaaaaa 180
aaggttaagg aatttgtaat gagaagctaa aaactttaag gaattttaag gaactcaaaa 240
caaaaactca ttaaatgtaa ttaaagtgaa ttctacaaat aaagcctctt aatacatttc 300
tataatagtc acttaagact taaattcaaa cactagcaaa ccacaaaatc agactgtntg 360
actgacatcc aaaagataaa tataaatcaa aatccgaccc cagcattagc caaggggtag 420

gtgttcctct tgaggaaggc aggaattcct cttctgccac ctgttgg 467

<210> 457
<211> 183
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(183)
<223> n = A,T,C or G

<400> 457
ccaaattttn tactttaaac actgaaaaca gaggaagtta ataaaaattt taacctataa 60
agtcccctgg ttgttagtca ttaacagcag attgtcagat aagactggta aaatgatggc 120
tgctaagcat ttgatgatcc aggcgcagga tgatcaaact gcagcagatc atgcacgtga 180
cag 183

<210> 458
<211> 445
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(445)
<223> n = A,T,C or G

<400> 458
gaaaaatata aagccaaaaa ttggataaaa tagcactgaa aaaatgagga aattattggt 60
aaccaattta ttttaaaagc ccatcaattt aatttctggt ggtgcagaag ttagaaggta 120
aagcttgaga agatgagggt gtttacgtag accagaacca atttagaaga atacttgaag 180
ctagaagggg aagttggtta aaaatcacat caaaaagcta ctaaaaggac tggtgtaatt 240
taaaaaaaac taaggcagaa ggtttttgga agagttagaa gaatttggaa ggccttaaat 300
atagtagctt agtttgaaaa atgngaagga ctttcgtaac ggaagtaatt caagatcaag 360
agtaattacc ancttaatgt ttttggcntt ggactntgag ttaagattat tttttaaatc 420
ctgaggacta ncattaatgg gacag 445

<210> 459
<211> 426
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(426)
<223> n = A,T,C or G

<400> 459
cctatgatan cttctctagc tatcatactc caatcagcaa aaaatgagaa aatgttgaga 60
aatagaagat aattcctcat ttaaggccac cttctagaat ttgtgcttaa gattctgctt 120
tcttctcatg ggccagcact tcggcaactg gcaaaaatta ggtgtacagg gatctaggta 180
atactgttta tttgagcaat aatatattgt gctaacgttc aggcatccta ttactgagaa 240
ataagggaaa atgagtgtaa agtacaacta agagtctcgg cgacagggaa aaataccatc 300

agttaaatat ccatagtcct agagcattta tgtaaaactg caatntgaat cctgcaatac 360
atnttggctt tttccctcag tgataccatg tgagggaagn ngctctgtca aggcgggccg 420
gataga 426

<210> 460
<211> 348
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(348)
<223> n = A,T,C or G

<400> 460
ccaaatttta aaatgttatt tttcatatca tttataacct tgtcacaatc cacttaaaga 60
agtttggtta tatttcactg aaaattttct tccagagtag gtttttttc gtgggttggg 120
gggtaacttt actacaatta gtaagtntgg tgcagaattt catgcaaatg aggagtgcag 180
cagngtgata atttaaacat atntaaacaa aaacaaaaaa aatgaatgca caaacttgct 240
gctgcttaga tcactgcagc ttctaggacc cggtttcttt tactgatnta aaancaaaac 300
aaaaaaanta annacnttgt gcctgaaatg aancttgttt ttttntna 348

<210> 461
<211> 378
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(378)
<223> n = A,T,C or G

<400> 461
ccactaagac agaacggaat ctagtagaag tgcaccaatg cttcagtccc tcctactcag 60
catggtgagc agtggtcaat ctgtgccctg tggaatgatg ggcagataat tctggcatgt 120
gtaaataata ataaataatt cacttggtgc aggcagtatg tctatgaatt aaaacctagt 180
gtgtacacag tgcctacatg tgttacagcc ccacagtagg aatctacacc aaaatattta 240
ttagaaggaa tttggtccgt actacatcac gctttccgga gggtaaaaaa taaagtccat 300
ctatagacat ttcaccacag acccagagac tgagtctggc taaaacctgc aaaatgtcta 360
taacaaaagn ggatggct 378

<210> 462
<211> 197
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(197)
<223> n = A,T,C or G

<400> 462
gcgaggtcca cactattaaa agctgttggg taattgaagg tgatataaaa tgactgtcnt 60
catttggagt gngcagcaca nttacttcat gttgctcang tttanaacaa tntcccctgn 120

aagttctcac acagatnggn agaaatcata cctanttntg gtnaatcact atggcagccg 180
tngaagaatn taagaga 197

<210> 463
<211> 279
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(279)
<223> n = A,T,C or G

<400> 463
cataagtgat gangaggnaa aatcantnaa taagcctaca acntagaata cattaaaact 60
tgcacatata catgttcaca gcatgtatac aatgataatc cctacggttt aaccaagtta 120
tggttccctt ctacagcaga cacaaaacca aggtgaacta ggtnggcaga tgtanaggga 180
ataccaaaaa aagggtaatn ngntcactga ttctgaagna tntgactgan catactgagc 240
ttctgnactt tgggaatgca tnnaggnaac aatatcttg 279

<210> 464
<211> 552
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(552)
<223> n = A,T,C or G

<400> 464
gatgggttga taggtgcagc aaaccaccct ggcgcatgtt taccaatgta acaaacctgc 60
acatcctgca caggtactcc aaaactaaaa gtaaaaaaat ctaaaagaaa aaagaaaaag 120
aattaaaccc aaaatcactt ccccatctgg acttgattta gatgaaaagc ttctggactt 180
tgagctgatg ctatagtggg ttgaaaattt tggggtcctc agaaggggat gaggatatat 240
tgcatgagag agcaacatga atcatngaga gccagagtat agagagnggt gggtagactg 300
taggagagcc ctcaatgatc ccggctgtct tgtattcgcg ttgcacttac ttgtataata 360
tggcagatgg gatgtgatgt cactttcaag attangttat aaatagacta tggcttcaat 420
cagagggttt tcttctctgt ctanctctct tttgggtagn ttcattctga gagaaagcca 480
nacctcngcc gcnacccacg ctaaggggcg anttccagcn cactggcggc cngttactag 540
tggatccgng ct 552

<210> 465
<211> 444
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(444)
<223> n = A,T,C or G

<400> 465
ccactcttgg tagaaacctt gaaactttca ccttgctggg ctttagcaaa gtttcctttt 60

acagttctgt ttatgagctt cagctactga taaagcactt cctgaacttc tctattatca 120
tagngaccct ctgaataacc tgagtgactg gctcggcaat tcgctttata accattctta 180
ttcccaaagt tggagcacat aaacatttag atgtcttttc ctgtaaaata ttctagacat 240
ttacccaaac tctagttcaa catatactca acttgcactg tatatctccc tgcttttttg 300
agacagagaa gaaattcagg aggtgnccca tctccagagt ttctctgttg gaaagcagcn 360
atcaagaanc ctttaaaaaa ttggtgtnaa gctntgccnc ctgcagaaat gcntngcccc 420
acattattct tctggggnaa agna 444

<210> 466
<211> 381
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(381)
<223> n = A,T,C or G

<400> 466
cctactatgg gtgttaattt tttactctct ctacaaggtt ttttcctagt gtccaaagag 60
ctgttcctct ttggactaac agttaaattt acaaggggat ttagagggtt ctgtgggcaa 120
atttaaagtt gaactaagat tctatcttgg acaaccagct atcaccaggc tcggtaggtt 180
tgtcgcctct acctataaat cttcccacta ttttgctaca tagacgggtg tgctctttta 240
gctgttctta ggtagctcgt ctggnttcgg gggtcttagc tttggctctc cttgcaaagt 300
tatttctagt taattcatta tgcannaggt ataggggnta gtccttgcta tattatgctt 360
ggttataatt tttcatcttt c 381

<210> 467
<211> 95
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(95)
<223> n = A,T,C or G

<400> 467
cctatanatt ntggnttgta tactgggtcc tgaaaaccct cttggngctc tgtttttaag 60
gagctgaanc caangancgc caataataat acttt 95

<210> 468
<211> 224
<212> DNA
<213> Homo sapien

<400> 468
cagtgggtct ctgatgcctt gcctgcagca gaaggaggga gcagagatca agaggaagga 60
aaaaatcata tgtacttatt tgaaggtaaa gattattcta aagagcccag taaggaagac 120
agaaaatcat ttgaacaact ggtaaacctt cagaaaaccc ttttggagaa agctagtcaa 180
gagggccgat cactccgaaa taaaggcagt gttctcatcc cagg 224

<210> 469
<211> 416

<212> DNA
<213> Homo sapien

<400> 469
ctgagttcta gttcaaaagc tttatcctta acttcgtcat gtactatgta aattctagaa 60
tagaaaaggg aaaggtaaga ttttggtaac ctccaaacat tgaagtagtt cacagaccca 120
aagtcagtac aaattagaat gtccatccat aataaaagta tctataaaat tacacagaca 180
cattctacat agtatttaac attagagaag acaaattaca cagggactga aataaaatga 240
aacatctact ctcccgacaa atgttgaata tacctaatca acccaagttc agtttatttt 300
tgcacattgc tttagagata taacttggct gggcacagtg gctcacacct gtaatcccaa 360
cactttggga gaccaaggcg gatggatcac ttgaggtcag ttcgagacta gcctgg 416

<210> 470
<211> 376
<212> DNA
<213> Homo sapien

<400> 470
caccttttaa ctgtatcaca aagtctgttg ctgtggttac agcctttgtt tccagtgatg 60
ttttgtccat gctttccccc aacccttaac aatggttact caaaagaatg aaataatgag 120
tcattcattc gggaatatgt taaaatatcc ctctttatca ttacatttca ctgcttagaa 180
actaggctgt aattcaaggc aacagttaag tctgagaact gttaaaaaaa tctttgattt 240
tttttcattt ttaagaaaaa cctgcctatt taattgttca gacttgtaag aggttcttca 300
attacatcct ttttggttaa tgtattattt ctggaacaag tagataaaat tctacgcagt 360
aagcataata aaaatc 376

<210> 471
<211> 357
<212> DNA
<213> Homo sapien

<400> 471
ggcttcgtat aatggttctt ttgtcacccc tgatcgacga tttcgctacc cgtacaactc 60
tgacaaggga acgaaatgct tctgtgtatt cacctagtgg tcctgtgaac agaagaacaa 120
caactccacc ggatagtgga gtactgtttg aagggttagg catttcaaca agacctagag 180
atgttgaaat tcctcagttt atgagacaga ttgcagtaag gaggccaact acggcagatg 240
aaagatcttt gcggaaaatt caagaacaag atattattaa ttttagacga actctttacc 300
gtgctggtgc tcgagttaga aatattgaag atggtggccg ctacagggat atttcag 357

<210> 472
<211> 557
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(557)
<223> n = A,T,C or G

<400> 472
cngagatgac atttacaatc tcttgaaang cagcagatgg cactctggtg cttcctatga 60
agcaacatgc ttgaaatcaa gggccaacaa ttgttgtagg aaagcaaaat atacctctaa 120
cacctacgtt taccaaaaaa gctgacatct caaactctga gttgttgaga ctcaaatttc 180
tcatccccaa agaagcctat tacggtagtg tgntggatgc tttttgtatc tctgataggc 240

aggcactata atggggggaa atacttctga ataaaaacat tggctgtctt gcaactgtgc 300
atataatgtc tattcaaggg ggcagtgtgc ctagcatgat cctgaaatgt tgagataaaa 360
ggaagttggc attaaagcac tatttgtctt atatgaaaag agtgactcta tcttccagta 420
aacaagantt cctgcaatga aaaagaaatt ttttccttca ttatctataa actatacaaa 480
ataaccttcc tttttaacct aagactcaaa cattnatatt tgattttatt ctatttgata 540
ccaattggta tgtccag 557

<210> 473
<211> 264
<212> DNA
<213> Homo sapien

<400> 473
cctccatcaa cagaaaggat aaagacccct tcgggtctcc tcattaattc tgaactggaa 60
aagccccaga aagtccggaa agacaaggaa ggaacacctc cacttacaaa agaagataag 120
acagttgtca gacaaagccc tcgaaggatt aagccagtta ggattattcc ttcttcaaaa 180
aggacagatg caaccattgc taagcaactc ttacagaggg caaaaaaggg ggctcaaaag 240
aaaattgaaa aagaagcagc tcag 264

<210> 474
<211> 165
<212> DNA
<213> Homo sapien

<400> 474
aattcagctt ccagaggccc ttattagtcc ttgttgacag aaacatagat ttggcaactc 60
ctttacatca tacttggaca tatcaagcat tggtgcacga tgtactggat ttccatttaa 120
acagggttaa tttggaagaa tcttcaggag tggaaaactc tccag 165

<210> 475
<211> 417
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(417)
<223> n = A,T,C or G

<400> 475
aagttctctt cttgttttaa acacattcct gataacttct aaagatgacc aaaataaaac 60
agaatatcta cagagatcat tttctgaatt ttttgtacat ccaaggataa caacataaaa 120
aaaataaaac tggacagcat tccacatcca agtgcacaga accatttttg caagattaaa 180
taatgtaaac attgggaaca gccaaatcag cgaagaatgc caacacctca aaacacctgg 240
tgttgccgct tcattaagtg gttcaaaatc cagatctata attgcgcaat attcaccgta 300
tataaaaaga aatggatatt aattttgaca aatagctgca actgagactt ctttttattt 360
ctttatatgn gnatatagtg aatttttatt atttttaaaa ttttatttat tttttta 417

<210> 476
<211> 321
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(321)
<223> n = A,T,C or G

<400> 476
catttaataa caaaaacaac ctgtacggaa aacccnaagg caaccacata gcatatgtaa 60
aatgtgcaaa tacactttaa aatgcangtt attctatagc anttgcaaga tagaatttca 120
ctgtaattag ggaatctagc tcatcctaac ttaatagnct tttgcatgtn tagacaatgc 180
aattctacaa ggnacnactc agcgttgatg ctaaagtatg aaacacatcc tcagattatt 240
catccgaaaa tattaaaata gcntcatgtt ttattattct ttaatgagtc ntgagctcat 300
ttctaaagct tcataaagca t 321

<210> 477
<211> 546
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(546)
<223> n = A,T,C or G

<400> 477
gctgtggtta tattgtaaat gaagcatcta acatgtgcac aacttgcaac aaaaactcct 60
tggactttaa atctgtcttt ctcagtttcc atgtgctgat tgatctgact gatcacacag 120
gcacccttca ttcctgtagt ctcacaggaa gtgttgctga ggagactttg ggctgcacgg 180
tacatgagtt tcttgcaatg acaaatgaac agaaaacagc attaaagtgg caattcctct 240
tggaaagaag caaaatttat ttaaaattcg ttctatcaca cagagcaagg agtggattga 300
aaattagtgt actctcgtgc aagcttgcag atcctactga ggcaagcaga aacttgtctg 360
gacaaagaca tgtttaaaac ggtctatcat tttgaactct ggaaaagtat aagagtttta 420
actcccttta aaatggaata ttaatttgaa aattatgggg aaaattgcat tttgtttaca 480
tgtggtgaac atgtttctag aaattggtat ggcgggaagg gggctgggtg agtctgaagg 540
acctcn 546

<210> 478
<211> 100
<212> DNA
<213> Homo sapien

<400> 478
aagaaaagtg gtaaaatcaa gtcttcttac aagagggagt gtataaacct tggttgtgat 60
gttgactttg attttgctgg acctgcaatc catggttcag 100

<210> 479
<211> 508
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(508)
<223> n = A,T,C or G

<400> 479

gnnttccaaa ttcttctaac tcttccaaaa gccttctgcc ttagtttttt ttaaattaca 60
ccagtccttt tagtagcttt ttgatgtgat ttttaaccaa cttccccttc tagcttcaag 120
tattcttcta aattggtcct ggtctacgta aacaccctca tcttctcaag ctttaccttc 180
taacttctgc accaccagaa attaaattga tgggctttta aaataaattg gttaccaata 240
atttcctcat tttttcagtg ctattttatc caatttttgg ctttatattt ttctatcttc 300
tatacttctc caatacttgt cttagcttgt ttttcatttt ctatctgaaa ctcttgacaa 360
tatcttctaa tttccctatc ttctctattc ttttcttcgc cttcccgtac ttctgcttcc 420
agntttccac ttcaaacttc tatcttctcc aaattgttca tcctaccact cccaataatc 480
tttccatttt cgtgtagcac ctggncag 508

<210> 480
<211> 81
<212> DNA
<213> Homo sapien

<400> 480
ggtgcccttt tcctaacact cacaacaaaa ctaactaata ctaacatctc agacgctcag 60
gaaatagata aggaaaatga c 81

<210> 481
<211> 306
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(306)
<223> n = A,T,C or G

<400> 481
tcgccttcgg ccgccgggca ggttaggggn acaagacgct acttccccta tcatagaaga 60
gcttatcacc tttcatgatc acgccctcat agtcattttc cttatctgct tcctagtcct 120
gtatgccctt ttcctaacac tcacaacaaa actaactaat actaacatct cagacgctca 180
gggaatagaa accgtctgaa ctatcctgcc cgccatcatc ctagtcctca tcgccctccc 240
atccctacgc atcctttaca taacagacga ggtcaacgat ccctccctta ccatcaaatc 300
aattgg 306

<210> 482
<211> 582
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(582)
<223> n = A,T,C or G

<400> 482
gggggaaca gtcattatac attatttaga ctcattcctt cttccagtgc ccttatgatt 60
atttcctacc tttaccattg atcttaaact gngcaggcta aaaagaggaa ccagaactcc 120
cttaagcact tttaagacta tttaaaaaat aaagntttgt tggcattgaa gagtaagctg 180
cttaagggac tgaatgaaaa gatagtaccc tttgtggctg tatgaagaga gaaactgaat 240
ttctatccaa gagaccttaa tntagcctat tagggaatta tcttccccaa aagtacaagt 300
aattttgcac tgcaggagaa ggataagtag atttgattta catcacattt tatacacacc 360

tttcaagang gagaaatctg cttcataaat agnaggaatc tatgcttaaa ctnaacattt 420
aatggtgacn tcttacaaca gccttgaaaa nnattggaan tcngacntga nggnggaaac 480
tggaanaaag aatatctttc tcttctgcat cctttnatcc tcaaacttag catggattca 540
cacgctgagg aaangttngg tnacnaccng aacatttaga ta 582

<210> 483
<211> 275
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(275)
<223> n = A,T,C or G

<400> 483
gcctcactaa aataacagat ttcagtatag ccaagttcat cagaaagacc caaatggaat 60
gatttacaaa atagaacact ttaaaccagg tcagtcctat ctttttgtag ctgaaggcta 120
tcagtcataa cacaatttcg cgtacacctc tgctcattat ggaattacac ttaaaacgaa 180
tctcaagagg gtgaccattg ttgtttcaga taccatccct aaggagagtg gttaacagga 240
agattgccag ngttactgat ggaaagaagc gcttg 275

<210> 484
<211> 434
<212> DNA
<213> Homo sapien

<400> 484
catatttcca caggccaatt tctttctgtt tttctgctaa gctatttcag cattttagct 60
tttcctcttt gctttgttta ctcatgattg ccagatggct acgttacctc taagcatcag 120
atcctcacaa attaatggtt aaatgtaagg gagggatttt actctcttgc attaaaaaaa 180
agctttattg agatataatt tactgtaaca ttgactcatt taaagtatgc tagtcaatag 240
accaaatctt gaataaactc ccattcacaa ttgctacaaa gggaataaaa tagctgggaa 300
tatagctaac aagggaagtg aagggcctct tcaaggagaa ctacaaacca ctgctcaaga 360
aataagagag gatacaaaca aatggaaaaa cattccatgc tcatgaatag gaagaatcaa 420
tatcgtgaaa atgg 434

<210> 485
<211> 291
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(291)
<223> n = A,T,C or G

<400> 485
ncaccactgc agccctacat acagttgaaa aaaaattcca ttctgttaac atttgtttta 60
taagttttca cgcaatacac aaaaaacccc tctgcacttc ttgtaaagaa caaaaaagat 120
acacaacagt taagcgtaaa gatcacaggc aatagcattc aaacatggat gtgggtagag 180
aaaggagtac ctggcatgag tacctgctta gtttgactga atccttgatt tttaatttgg 240
cttttcatgg gccgctcaca acaccaacgc tgtgtgaggt atggtagtca g 291

<210> 486
<211> 274
<212> DNA
<213> Homo sapien

<400> 486
ctgtaatatt gtagttgctc cagaatgtca agggcagctt acggagatgt cactggagca 60
gcacgctcag agacagtgaa ctagcatttg aatacacaag tccaagtcta ctgtgttgct 120
aggggtgcag aacccgtttc tttgtatgag agaggtcaaa gggttggttt cctgggagaa 180
attagttttg cattaaagta ggagtagtgc atgttttctt ctgttatccc cctgattgtt 240
ctgtaactag ttgctctcat tttaatttca ctgg 274

<210> 487
<211> 184
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(184)
<223> n = A,T,C or G

<400> 487
tggcaccaag attctcagct cacggtacca gcatctgatt gtcggactac ctgctgcttt 60
ccctgatatt tatacatgat attcgnaaaa tgtaaagaag ctattattca tacagacatc 120
tagagaagga gngaagnttt taaaaaaata aaaaaatact tatttcaagc tttagctgtg 180
ttct 184

<210> 488
<211> 393
<212> DNA
<213> Homo sapien

<400> 488
ctgcattttt attgcgatct gcagatgaac tggaaaatct cattttacaa cagaactggg 60
acagacgacc accatattca ctgaggtcta aatttgcagt ttccactaat gacattttga 120
tttcccaaca gagatacttc tggtcttact gcacagtctt ttaagagaaa tacttccatt 180
atgccacatt gtccttgatc cgtaagtgat gtgttaaggt gcttcaaagg aactctgacc 240
tctgaagtac ttgagctact ttagtatgtc cagcctattg ctttttgttt tagtgtgtca 300
ccataaatat caggggcata aaaggctatc tattcttaat tcaaggataa aacagaagaa 360
gcttgtggta taaaacaata gttcaagatc cag 393

<210> 489
<211> 607
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(607)
<223> n = A,T,C or G

<400> 489
gtgcttatgt acttaagggg aactactcta actgggtgaa gagtangatg aagcatccat 60

gtccctacaa aggatatgaa ctcatccttt tttatggctg catagtattc catggtgtat 120
atatgccaca ttttcttaat ccagtctatc atcgatggat atttgggttg gttccaagtc 180
tttgctattg tgaatagtgt cgcaatgaac atacatgtgc atgtgtcttt atagcagcat 240
gatttataat cctttgggta tatacccagn aatgggatag ctgggtcaaa tggtatttct 300
agttctagat ccttgtggaa ttgccacact gtcttccaca atggttgaac tagtttacag 360
tcccaccaac agtgtaaaag tggtcctatt tctccacatc atctccagca cctgttggtt 420
cctgactttt taatgattgn cattccaact ggtgtgagat ggtatatcac cgtgggtttg 480
atttgcattt ccctgatggc cagtgatgat gaacnttttt tcatgtggtt tttggctgca 540
taaatggcct gccttttnta cttctataaa atttttcann tcttattatt attcctgggg 600
gnttaag 607

<210> 490
<211> 179
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(179)
<223> n = A,T,C or G

<400> 490
cttctaggaa tactagtata tcgctcacac ctcatatcct ccctactatg cctagaagga 60
ataatactat cactgntcat tatagctact cccataaccc tnaacaccca ctccctctta 120
gccaatattg ngcctattgc catactagtc tttgccgcct gcgaagcanc ggtaggacc 179

<210> 491
<211> 399
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(399)
<223> n = A,T,C or G

<400> 491
cctctacctg taatcacatt aatttttcta aagacagggg nggtgttttg aagataaatg 60
tcattagtct atgataatag catcatagga caattagcca ttttagactt gaccatattt 120
tctcttttta gcatatagcc atcttgatat ttaggnggga gactactcca atggagcaac 180
agtttcattt tacatgattg gatttagaaa tttacaaatt ttaaactcat aagaattcta 240
aataatttga aaatggaaac atttgaccca cagtctagca gcataaatac atttataaaa 300
tacttcattg ttgatcttag gtcattgatt taaaacagaa tttggtgact atgggcaggt 360
ggagggggcc ngtgaggaag gtataaaaga gaaatcttt 399

<210> 492
<211> 482
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(482)
<223> n = A,T,C or G

<400> 492
ctccacctta ctaccagaca gccttagcca aaccatttnc ccaaataaag tataggcgat 60
agaaattgaa acctggcgca atagatatag taccgcaagg gaaagatgaa aaattataac 120
caagcataat atagcaagga ctaacccta taccttctgc ataatgaatt aactagaaat 180
aactttgcaa ggggagccaa agctaagacc cccgaaacca gacgagctac ctaagaacag 240
ctaaaagagc acacccgtct atgtagcaaa atagtgggaa gatttatagg tagaggcgac 300
aaacctaccg agcctggtga tagctggttg tccaagatag aatcttagtt caactttaaa 360
tttgcccaca gaaccctcta aatccccttg taaatttaac tgttagtcca aagaggaaca 420
gctctttgga cactaggaaa aaaccttgta gagagagtaa aaaatttaac acccatagta 480
gg 482

<210> 493
<211> 207
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(207)
<223> n = A,T,C or G

<400> 493
cataaatatt atactagcat ttaccatctc acttngngga atgctagtat atcgctcaca 60
cctcatatcc tccctactat gcctagaagg aataatacta tcactgttca ttatagctac 120
tctcataacc ctcaacaccc actccctctt agccaatatt gtgcctattg ccatactagt 180
ctttgccgcc tgcgaagcag cggtagg 207

<210> 494
<211> 283
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(283)
<223> n = A,T,C or G

<400> 494
ccaattgatt tgatggtaag ggagggatcg ttgacctngt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg 180
gcatacagga ctaggaagca gataaggaaa atgactatga gggcgtgatc atgaaaggtg 240
ataagctctt ctatgatagg ggaagtagcg tcttgtagac cta 283

<210> 495
<211> 590
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(590)
<223> n = A,T,C or G

<400> 495
tatgtatata atttcttag ttactagcat agagaaatta ctgatttaaa aaaacatttc 60
aaattctagc atgttgtagg attctattgc cctttctaaa aagtacatct tgcttatccg 120
atttctaaca aaactattta atttgaagaa gggagaatga atttggataa aaagcaaaaa 180
tttaaaggta ctcaaattta ggcaaaccat taaagcaatc ttagtttaca gttaattggg 240
tagaatggtc aacactttct tcaggttagt tcatggagtg gatatgcatt gatagaacaa 300
cttagagatg cttttacagt tgagaaagct cattatattt gttatcttta agaatcagct 360
tatttatttc atatgtttgt tctttaagaa gaccaaagag ccctgcaaat gaatgttgat 420
ttgttttttt gtttgtttaa tatttttgta gagataagat ctcactttgt tatgttgccc 480
aggctggtct caaactctca acttgaagtg atctgcccac ctcagcctcc caaagtggtg 540
ggattacagg catgagccac cgcacctgga cctgcccggg cggncgctcg 590

<210> 496
<211> 307
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(307)
<223> n = A,T,C or G

<400> 496
ggagattagt atagagaggn anacnttttt tcgngatatt tggtcacatg gataagtggc 60
gctggcttgc catgattgtg aggggtagga gccaggtagt tagtattagg aggggggnng 120
ttaggggtc tgaggagaag gttggggaac agctnaatag gttgttngnt gatttggnta 180
aaaaacanta gggggatgat nctaataatt antgctgtgg gtggttgtgn tgattcaaat 240
tatgngcttt ttcggagann catgtcangt ggtagtaaat ataattgttg ggaccattan 300
ttcttan 307

<210> 497
<211> 216
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(216)
<223> n = A,T,C or G

<400> 497
cattttcctc ttggtttctt cagttaagtc aaanngncac gttcctcttt ccccatatat 60
tcatatattt ttgctcgtta gtgtatttct tgagctgttt tcatgttgtt tatttcctgt 120
ctgngaaatg gtgttttttt ttgttgttgn tggttttttt tttttttttt aaactnggna 180
ccncnaantt gaaaaaatgn ttntttttcc ctnaca 216

<210> 498
<211> 375
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

<222> (1)...(375)
<223> n = A,T,C or G

<400> 498
gaatttcctg gcaccttttc tcgctagaga agattnngtg tgactgggtt gcctataagc 60
catatagata caaactttta tctctaatac caagtcttag agggatatat taatagatct 120
aataaattta ttcttagact tattgtttca tgggntagtg agtctttgct actggagaca 180
atacagactt gtcagttttt ttaaaaaaaa aaaatttgcc aagctancac attaaaaana 240
tntcctaagg ctntcatttt atgaggatga ttataaacnt ttntgngata aatatcacca 300
taataaactg ttaagtacaa ctgcnggccn cccttanagn gaattcctnc agttanaaat 360
ttattttttt gccaa 375

<210> 499
<211> 215
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(215)
<223> n = A,T,C or G

<400> 499
ccacnaaagc agaagcttaa agcatagtag taaagaggnn aaaaagaagg acgaaaataa 60
atcagatgac aaggatggta aagaagttga cagtagtcat gaaaaggcca gaggtaatag 120
ttcactcatg gaaaagaaat taagtagaag gttgtgcgaa aatcggagag gaagcttgtc 180
acaaaaaaaa aaaaaaaaaa aaaaaaaaat gtttt 215

<210> 500
<211> 489
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(489)
<223> n = A,T,C or G

<400> 500
ccactacgat aagcaggtag ctgggttttg tagtgagntt gctccttaag ttacaggaac 60
tctccttata atagacactt cattttccta gtccatccct catgaaaaat gactgaccac 120
tgctgggcag caggagggat gatgaccaac taattcccaa accccagtct cattggtacc 180
agccttgggg aaccacctac acttgagcca caattggttt tgaagtgcat ttacaaggnt 240
tgtctacttt cagttcttta ctttttacat gctgacacat acatacactg cctaaataga 300
tctctttcag aaacaatcct cagataacgc atagcaaaat ggagatggag acatgatttc 360
tcatgcaaca gcttctctaa ttataccttta gaaatgttct ccttttttatc atcaaatctg 420
ctcaagaagg gctttttata gtagaataat atcagtggat gaaaacagct taacatttta 480
ccatgctta 489

<210> 501
<211> 286
<212> DNA
<213> Homo sapien

<400> 501
aaaaacactc aaacacagcc ttggagggag gagtcagttt taaaagactc ttataaaagt 60
aatatactgc tagctctgaa gaatcggagg ctaaaatcat ctcttcaagt ccccagggaa 120
tcccaaagaa ctccagggga aggtgggatg ggccagagag ctctggaagc ttccaggtct 180
gttgcaagcc tcacctggta cacagtaggc tcttccaggt ctgtcaggaa cccaggagcc 240
tcccctagca cacagtaggc tcacaaaaag ggagcactgc tgctgg 286

<210> 502
<211> 168
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(168)
<223> n = A,T,C or G

<400> 502
cctatgattg tgggggcaat gaatgaagcg aacagagntt cgttcatttt ggttctcaga 60
gtttgttata attttttatt tttatggcct ttggtgaggg aggtaagtgg tagtttgtgt 120
ttaatatttt tagttgggtg atgaggaata gtgtaaggag tatggggg 168

<210> 503
<211> 173
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(173)
<223> n = A,T,C or G

<400> 503
cctttataat aaattaggca aaaggttcag tgcnnggcta tantggacaa catgaaactc 60
cataaaaatg actggatagg gggactgctt gagacttttc ttttgggcat tactaacaga 120
attcaaagaa attccaacca cgcttatttt tccaaattct actgaaatga gag 173

<210> 504
<211> 310
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(310)
<223> n = A,T,C or G

<400> 504
tagtattcta tttaaaaatt aagttttggg gtctgtaaaa tatacaggac aatgactttt 60
ttaaaatgta agttaatacc tcctcctcac ttgtcttaat tgaacttagg tgtttattct 120
taaaggngga ccttgatgaa aatgttgaga tgggaagtgt tattaggcaa aacttgttat 180
agatttctca tataactctt aattgaccct tagaatttta acaaccgcgc ctggcccaat 240
agactgtttt ttagagtant tttaggctct cancaaaatt gaggggaaaa tacagggtgt 300
tcccattaaa 310

<210> 505
<211> 530
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(530)
<223> n = A,T,C or G

<400> 505
cctcagggaa cttacaatta tggcaaaagg ggaaggggaa gcaagcacct tcttcacaag 60
gcatcaggag agagagagaa agagagtagg ggaaactacc ccttttaaac catcatatcc 120
tgtgagaact ccctcagtat tagaagagca tgagggaaac cgcctccata atccaatcac 180
ctcccaccag gaccatccct caatacatgg gggttacaat tcaagatgag gttcgggtgg 240
ggatacagat ttaaaccata tcagaatggt taatgatatt gttgtatttt accaactata 300
atcttcttag tgttatagta caataatgta aaaaattgag taaatttgtt ttctatatta 360
ttctgttttt ggaaaacatg tatatagtca gggctgtttg tctcaagaaa atatggtaaa 420
ctctgctgtt ttggtcactg gtgcctagaa tttggggatg tacattggtt ttgattcaca 480
tgcacatttc cttctagttc acagtaacta tttctaacta tttcccnata 530

<210> 506
<211> 352
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(352)
<223> n = A,T,C or G

<400> 506
cttgaacgct ttcttaattg gtggctgctt ttaggcggta ctatgggtgn taaatttttt 60
actctctcta caaggttttt tcctagtgtc caaagagctg ttcctctttg gactaacagt 120
taaatttaca aggggattta gagggttctg tgggcaaatt taaagttgaa ctaanattct 180
atcttggaca accagctatc accaggctcg gtaggtttgt cgcctctacc tataaatctt 240
cccactattt tgctacatag acgggtgtgc tcttttagct gttcttaggt agctcgtctg 300
gtttcggggg tcttagcttt ggctctcctt gcaaanntat ttctagttaa tt 352

<210> 507
<211> 370
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(370)
<223> n = A,T,C or G

<400> 507
cctaactaga tcttatcaga ataggggga agggngtcgg ttcatcctta ttgagtgtta 60
atgaccctgt aagatgtaat ttcttttatt tcattctgtt acctagaaaa tctatcacag 120
ccttgtagta ttgattgctc aatctataaa gagctcagtt tacagcatga ctgttagtaa 180

cagggntatt ttaatgagtg actcttcaac acctcagagt ttcactaaat tccaacccat 240
cagcccagta gtctaacatt aagggtctta ggaaatgaga acttatcacc tttccttatc 300
atgaaaaggt aacctccagg taaccaaaaa tagaacttcc tctgtgttcg ttttttatag 360
aaattactgg 370

<210> 508
<211> 129
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(129)
<223> n = A,T,C or G

<400> 508
ctgttaaaag aacaaactta gcaatatata acagttnggt aacaggattt ttgactattc 60
actttgggag ttatttttaa aaatccactt ttttactgag tcttactaca taccaggcac 120
tgtacttgg 129

<210> 509
<211> 422
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(422)
<223> n = A,T,C or G

<400> 509
ntgggaagtc gtgacatcca tgggaaccca gcgctgtgat gctggtgttt gngttctccg 60
cgagaagtga ccattgttgg agcaccatcc agagctagtg accantncag tggacagtta 120
gtgggagaat caaaaatcct ttccagaatg tctgtttctc actacntgca ccgggngatt 180
acaggcacca gtgcagngat gattgtactt atttgacaca tactccccgt cntcctggnt 240
nttgttcctg anaanggtgg gtaaatattc caggaaaaan aatgcacatt gaatggatgt 300
gagagaccac attgcctctc ccactgcttt ggggagcact ttcctgtcat ttctaactta 360
ccacntgctt ggtgtactat atgtatgttg tgcctcatat gttgcaaaga actaangtga 420
gt 422

<210> 510
<211> 238
<212> DNA
<213> Homo sapien

<400> 510
ccacctatga attggtggtt tacctactca atggatagca gcacgaggac tgctgtactg 60
cacaaaaaga agaccaaaag attacagtgg accatgggat acagaagcca gcatggcaga 120
cagaagaaaa atagtttggg aacatgtaac tatcctaagt ggaagttttg ttgtaggaat 180
tatagtaatc acaccacatt acttggcctt tcggtaatgt gaaaaaaaaa aaaaatcc 238

<210> 511
<211> 254
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(254)
<223> n = A,T,C or G

<400> 511
ccnattgatt tgatggtaag ggagggatcg ttgnggctcg tctgttatgt aaaggatgcg 60
tacggatggg agggcgatga ggactaggat gatggcgggc aggatagttc agacggtttc 120
tatttcctga gcgtctgaga tgttagtatt agttagtttt gttgtaagng ttaggaaaag 180
ggcatacagg actaggaagc acgataagga aaatgactat gagggcgnga tcatgaaagg 240
tgataagctc ttct 254

<210> 512
<211> 269
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(269)
<223> n = A,T,C or G

<400> 512
cctacctgta aactacagta ctttatatat ctatgggntt aataaaaana aaatccacaa 60
atcttaaaaa ggaactttaa atgcagggct atattgaatt ggnaaactgc aacacaaact 120
ggcgcaacat aggtaaatga ataccaatct cactctatgt gatgcaagca tgctactttc 180
ccactaattt aaattacttt caaccactat gagccagaat gcatgcctga accttaaact 240
gcactttaaa aagtaacatc ttggcctaa 269

<210> 513
<211> 266
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(266)
<223> n = A,T,C or G

<400> 513
ggaggggggt tgttaggggg tcggaggaga aggntgggga acagctaaat aggttgttgt 60
tgatttggtt aaaaaatant agggggatga tgctaataat taggctgtgg gtggttgtgt 120
tgattcaaat tatgtgnttt ttggagagnc atgncantgg tagtaatata attgttgaga 180
cgattagttt tagcattgga gtaggtttag gttatgnacc gtactctagg ccatatgtgt 240
tgganattga nactagtagg gctagg 266

<210> 514
<211> 271
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(271)
<223> n = A,T,C or G

<400> 514
acatgcaana aatcgagaat cttaaaaaac annacgaanc tgccctggaa nncttactgg 60
nntangatat ttatnttgcg gctgagatac ttgaacaact tcggatcnga antagacaan 120
aangggnant tntatactgc nncagaggtt acacagntca ttgtattaga gangaacana 180
tgggtctggt gttcacacat tggggggaan atgggcgtnn acangagagg nnganaaacn 240
anganagcct ncctggttng cataanaaaa a 271

<210> 515
<211> 328
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

<400> 515
ccaatgaggg gcaaagtgag cgncnagaag angttttgac tgaaataaat caaacacaaa 60
aatntaagtt cacagtgaca gtttaaacaa aatccaaaca aactaacaac anaaacaccc 120
cttgntttgc ctctagtgga aggtgggana acacaanctc gtcctaaaaa ttgactagta 180
aaggggaaaa cccggtcatt tncctactct ttccangaaa tatctaatgc aagaaagaac 240
ttctnctcat tatacngaag gaatttngaa aaatgatgta tttttggaac acctaantga 300
aatactggaa cctgggcaag ttcaccac 328

<210> 516
<211> 220
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(220)
<223> n = A,T,C or G

<400> 516
ncctnagttg aaggacccca tgtacataca ggccagggga gcagtactag gntaactaga 60
aggatctcat ccccatatgt gggctcattt caagtctatg gatgactacc ttcattgntg 120
tgtgcgagat ggtttcaccc cttgaaaata tgggcacttc ancataanat agcnaaatct 180
ttataatgat caatncatcc tacctccttt tacatgcatg 220

<210> 517
<211> 296
<212> DNA
<213> Homo sapien

<400> 517
tgcgatttct tccttgttgt ttgctttggt ctgtgttcaa tccagagagc ttaaattgtc 60
attattttgg gaagaaaacc tgtatttttg ttagtttaca atattatgaa atttcacttc 120
aggagaaact gctgggcttc ctgtggcttt gttttcttag tttctttttc cgtgccgtgt 180

atttttaat tgatttttct tcttttactt gaaaagaaag tgttttattt tcaaatctgg 240
tccatattta cattctagtt cagagccaag ccttaaactg tacagaattt ccactg 296

<210> 518
<211> 299
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(299)
<223> n = A,T,C or G

<400> 518
gaagatagaa aaatataaag ccaaaaattg gataanatag cactgaaaaa atgaggaaat 60
tattggtaac caatttattt taaaagcccg tcaatttaat ttctggtggt gcagaagtta 120
gaaggtaaag cttgagaaga tgagggtgtt tacgtagacc agaaccaatt tagaagaata 180
cttgaagcta gaaggggaag ttggttaaaa atcacatcaa aaagctacta aaaggactgg 240
tgtaatttaa aaaaaactaa ggcagaaggc ttttggaaga gttagaagaa tttggaagg 299

<210> 519
<211> 464
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(464)
<223> n = A,T,C or G

<400> 519
gctgcacatc ggaggaaaac tcggtaaagc agaatgaggt tgatatgttg aatgtatttg 60
attttgaaaa ggctgggaat tcagaaccaa atgaattaaa aaatgaaagt gaagtaacaa 120
ttcagcagga acgtcaacaa taccaaaagg ctttggatat gttattgtcg gcaccaaagg 180
atgagaacga gatattccct tcaccaactg aatttttcat gcctatttat aaatcaaagc 240
attcagaagg ggttataatt caacaggtga atgatgaaac aaatcttgaa acttcaactt 300
tggatgaaaa tcatccaggt atttcataca gtttaacaga tcgggaaact tctgtgaatg 360
tcattgaagg tgatagtgac cctgaaaagg ttgagatttc aaatggatta tgtggtctta 420
acacatcacc ctcccaatct gttcagttct ccagngtcaa aggc 464

<210> 520
<211> 221
<212> DNA
<213> Homo sapien

<400> 520
ctgatatcta cttatttaac acaagtctct aatacaatac aattttatta attttattcc 60
acatgcccca cattagatct ctagactcat tcatcctaca tacctacttt gtatcctttg 120
acctacatct ccctacttcc tcctccagtc cccaccccc acccactggt gctaaccact 180
gtttcattcc ctttttcatt ctacatatgt gagatcatgc t 221

<210> 521
<211> 312
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(312)
<223> n = A,T,C or G

<400> 521
ctgatagctt tctcttcgcc tagattaata tcttctnnct tcccattcac agcccccacc 60
gacatcaaag ctttgctgtt ttatctgtca aaaatgtctt cacacttttc attcttaaat 120
aaaagtgctg agtaaggaca ttttcacaac aaatttttat tttacaaaac ttacaatgat 180
ttgaatccaa aacaactttc attatttaac tgtaaagtaa atatatattt tattaggngt 240
gtcttagttc attttgtgct gctttaacag tgtatccttg tgatagttgt ggggtggggg 300
agggggaag ga 312

<210> 522
<211> 336
<212> DNA
<213> Homo sapien

<400> 522
ccttctttcc ccactcaatt cttcctgccc tgttattaat taagatatct tcagcttgta 60
gtcagaccca atcagaatca cagaaaaatc ctgcctaagg caaagaaata taagacaaga 120
ctatgatatc aatgaatgtg ggttaagtaa tagatttcca gctaaattgg tctaaaaaag 180
aatattaagt gtggacagac ctatttcaaa ggagcttaat tgatctcact tgttttagtt 240
ctgatccagg gagatcaccc ctctaattat ttctgaactt ggttaataaa agtttataag 300
atttttatga agcagccact gtatgatatt tttaag 336

<210> 523
<211> 172
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(172)
<223> n = A,T,C or G

<400> 523
ngacnggcnc ntggctatgt ntatagatag ggctttaacc actatctgng aagcangagn 60
gacannattc ttgctctcac atnccacngg anacgtattt ctcttctctt acnagcgaag 120
aaccatctnt ttctaaagcc cccattctat tgcccttgct tttctctggc tt 172

<210> 524
<211> 471
<212> DNA
<213> Homo sapien

<400> 524
ccagacctgc agaaaaactt agcacagctc aatctgctgt tttgatggct acagggttta 60
tttggtcaag atactcactt gtaactattc caaaaaattg gagtctgttt gctgttaatt 120
tctttgtggg ggcagcagga gcctctcagc tttttcgtat ttggagatat aaccaagaac 180
taaaagctaa agcacacaaa taaaagagtt cctgatcacc tgaacaatct agatgtggac 240
aaaaccattg ggacctagtt tattatttgg ttattgataa agcaaagcta actgtgtgtt 300

tagaaggcac tgtaactggt agctagttct tgattcaata agaaaaatgc agcaaacttt 360
taataacagt ctctctacat gacttaagga acttatctat ggatattagt aacatttttc 420
taccatttgt ccgtaataaa ccatacttgc tcaaaaaaaa aaaaaacctt c 471

<210> 525
<211> 332
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(332)
<223> n = A,T,C or G

<400> 525
ccccnctgta ttccagcctg ggtgacccca tctcanggaa gaaaagttac cagatgtcgn 60
gggtaaaggt tggtcttcaa gtggcctcat aagttgtctt gcatttaaat tcaggaatt 120
cattggacca ataggttaca ttttcgttcc tttttgttt tggttcatct gttaagcagt 180
gggggcctaa ttactgctcc tttgtaaaaa cacattttcc caaagaacac tgaattaccg 240
ttcaaactgg ttgttgatgg gtaataaggg ctgtttttgc tgccccaaaa gggcttaaca 300
atttaggcgg atagtttact taaaaaaaaa aa 332

<210> 526
<211> 440
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(440)
<223> n = A,T,C or G

<400> 526
ccaggttacc tcccctaaca gatgtggtgt tctgangggt tggttaagtg cccgaggaaa 60
ataggcctta actgttaaca tctacagaga agaaagcatg gtcacactgg caaggagtaa 120
gaagggattg ggtaaaagaa aatgggagag aaaagggaaa aaagttttgg caagacaatt 180
gttccctgct aagaagctgc agggtgaaag ctttcctttc ttctattttt gtttttaatg 240
nctgtctctc tgatcagngg aaaagtgaaa atttctagta tctagcacta acgtatgacc 300
caactttgag ggatcacaag ctagaacaag ttgaggattt aaaatcctgg ataattatat 360
acttaaagtt catgagcata aagctcactt gaccatgcag aaatgctggg aagcagggtg 420
catggcatgg gaatacatct 440

<210> 527
<211> 124
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(124)
<223> n = A,T,C or G

<400> 527
tttccatatg tctgttgggt gcataaatgn cttcttctga gaagtgtctg ttcctatcct 60

ttgccccctt tttgaggact taaatgttag acctaagacc ataaaaaccc tagaagaaaa 120
ccta 124

<210> 528
<211> 162
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(162)
<223> n = A,T,C or G

<400> 528
ctgcgggaga aatatgggga caagatgttg cgcangcaga aaggtgaccc acaagtctat 60
gaagaacttt tcagttactc ctgccccaag ttcctgtcgc ctgtagtgcc caactatgat 120
aatgtgcacc ccaactacca caaagagccc ttcctgcagc ag 162

<210> 529
<211> 409
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(409)
<223> n = A,T,C or G

<400> 529
cctttaaaat atagcttata aaatgtatac tatnngccag gagagctcac atttttctgc 60
agttttccag tggacctgcc tatggaatac tgtaaagaaa aatctgcaaa aatattccta 120
gcaattgaat cagtgctttt aaataaaaga agtggagagg ggcttggtta aattattctg 180
acaagttttc ttgctagtgg ttgccaaaat taaggatatt tgaagtgtcc tatcacccaa 240
atttggcttt aagaaaaagc tatattctgn gtctataggg tgaagcccac actatctgtg 300
ctgcattctc aatgatacaa tacctatctg gaaactttcc tgttttgcca atgggtgcac 360
aaatctaaaa cattttatca caaaaggtac ttgaatttaa atttctttt 409

<210> 530
<211> 325
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(325)
<223> n = A,T,C or G

<400> 530
ccgccagtgt gatggatatc tgcagaattc gccctttcna gatttgngcc cgggcaggtc 60
catggctagg attatagata gttgggtggt tggggnaaat gagtgaggca ggagtccgag 120
gaggttagtt gtggcaataa aaatgattaa ggatactagt ataagagatc aggttcgtcc 180
tttagtgttg tgtatggcta tcatttgttt tgaggttagt ttgattagtc attgttgggt 240
ggtaattagt cggntgttga tganatattt ggaggtgggg atcaatagag ggggaaatag 300
aatgatcagt actgcggcgg gtagg 325

<210> 531
<211> 173
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(173)
<223> n = A,T,C or G

<400> 531
ccaattgatt tgatggtaag ggagggatcg ttgaccncgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt tag 173

<210> 532
<211> 395
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(395)
<223> n = A,T,C or G

<400> 532
caggtcctac tatgggtgtt aaatttttta ctctctctac ngggtttttt cctagtgtcc 60
aaagagctgt tcctctttgg actaacagtt aaatttacaa ggggatttag agggttctgt 120
gggcaaattt aaagttgaac taagattcta tcttggacaa ccagctatca ccaggctcgg 180
taggtttgtc gcctctacct ataaatcttc ccactatttt gctacataga cgggtgtgct 240
cttttagctg ttcttaggta gctcgtctgg tttcgggggt cttagctttg gctctccttg 300
caaagttatt tctagttaat tcattatgca naaggtatag gggntagtcc ttgctatatt 360
atgcttggnt ataatttttc atctttccct tgcgg 395

<210> 533
<211> 290
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(290)
<223> n = A,T,C or G

<400> 533
ctgaaccatt atgggataaa ctggtgcaaa ttctttgcct tctctacttc tcactgattg 60
aacataagct tccagggctc ccctgaaaac caaaatgaaa acaatgtcaa aatattagat 120
aaatcacata aaacagttaa ggggatacca atatataaaa attattaggt aagctcattt 180
ctggaactgt taatgctcgg tttcacaatc caagnngacc aacagccttc actcagntac 240
tggnagtgnt actatggtta ctacngntac tacctttagt gtnaaaaact 290

<210> 534
<211> 334

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(334)
<223> n = A,T,C or G

<400> 534
ccgccagtgt gatggatatc tgcagaattc gcccttagcg agnnagccgg gcaggtccat 60
ggctaggttt atagatagtt gggtggttgg tggggnatga gtgaggcagg agtccgagga 120
ggttantttg tggcaataaa aatgattaag gatactagta taagagatca ggttcgtcct 180
ttagtgttgc gtatggctat catttgtttt gagggtagnt tgattagnca ttgttgggng 240
gtaattantc ggctgttgat ganatatttg gaggtgggga tcaatanagg gggaaatana 300
atgatcagtn ctgcggcngg tnngacctcn gccc 334

<210> 535
<211> 557
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(557)
<223> n = A,T,C or G

<400> 535
nccataagct tcagtgcgca aaaggtcaag gccagtgtta atttgttatt tcttaaataa 60
ctttcccttt catttttaaa ttataaattt aacttctaac atgttttatg gttaaaattg 120
tactttttttc ctttagcgac attcaaatgc atcacaatca ctttgtgaaa ttgttcgcct 180
gagcagagac cagatgttac aaattcagaa cagtacagag cccgaccccc tgcttgccac 240
tctagaaaag tatgtgtaaa actctgttct tgttcttctt tcatattgat gctgttccat 300
gtgttaccat tgtgagtggt tggtaagtgt tccttatgtg ggaatcatgt gccttgaaaa 360
taaccttggg tgggtgagaa ggtagggaaa cctgcttctt ttatctcaag taaaagtttt 420
ggcagggtaa agaagataaa tgacatttat atctagactt ttgagttttc caattatttg 480
gtaaaaatgg gaaattctgt agaagccctt ccttaaaaat gggggaagtc catttnanaa 540
aattaactgg taggtca 557

<210> 536
<211> 372
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(372)
<223> n = A,T,C or G

<400> 536
gttccaacct tcatttctga aactgttcta gagcacngtg tctttctcgt agttcataac 60
ttacccccttc agtctagaat tagaattaca ttatctgttt tactacttta ctagactgta 120
agctcctaga agataaggac tagggagttc atctctgtat tccaccagaa ggtacagtga 180
ctcatatcta gagtctttag atgaaactta ctgagttgaa taacttaata tatttctgtt 240
ttcattccca agggaggcca tgtctggaga tagaccttga atttaataaa ttttaggcac 300

tataccattt cagtggagaa aattgttggg aaatttgggg ggatggatat ataaggggga 360
ggaagtcact gg 372

<210> 537
<211> 284
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(284)
<223> n = A,T,C or G

<400> 537
ccttctgatg caaacagaaa ggaaatgttg tttggangcc ttgctagacc tggacatcct 60
atgggaaaat ttttttgggg aaatgctgag acgctcaagc atgagccaag aaagaataat 120
attgatacac atgctagatt gagagaattc tggatgcgtt actactcttc tcattacatg 180
actttagtgg ttcaatccaa agaaacactg gatactttgg aaaagtgggt gactgaaatc 240
ttctctcaga taccaaacaa tgggttaccc agaccaaact ttgg 284

<210> 538
<211> 293
<212> DNA
<213> Homo sapien

<400> 538
gtacatagta ggtgtatata tttatgggct atataagatg ttttgataca ggcatgtaat 60
gtgaaacaag cacatcaaca agaatggggt atccatcccc taaaacattt gtcctttggg 120
ctacatgtca tttcctaatg taaagaaaat ggacagacag aaccaacatt gatttgactg 180
ggtgaaaaag tccatttgag ttgggagcag gggttgtgtt cctggatttg ggttgttagg 240
acagtgtaaa aaggcttcac aggggaacat tcttttctga taaaggaaag cag 293

<210> 539
<211> 468
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(468)
<223> n = A,T,C or G

<400> 539
tttcnataaa ctttattttt agagcagttt taagnnggta gcaaaattga ttagaaggna 60
cagagatgtc ccatacacct cctactccca cacatgcaca gccttcccca ttatcaatag 120
cccccaacag agggatacat ttgttaacaa ctgacgaacc tacatatcat tatcacccaa 180
agtccacagt ttatattatt ccttctggag aattttcaaa tacagaaatt cctctaccag 240
gaataaacta ncaatttcct ctcggctttc tataaattta attattattt cagaaattag 300
cctatcttta caggagaaaa tgttataaac catgaaaaga ctatcaaata cacaaggaag 360
tgaatgntat ataaaaaatg taccatctcc taaacaacta cctgcattcc cttcttgttg 420
gtaagttata atttgnnata gttctgatca tctgtttaat taatttgc 468

<210> 540
<211> 397

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(397)
<223> n = A,T,C or G

<400> 540
ctgttttatt aattccccca tttgcagcac acttntctct tccaacattc atcagtcaga 60
tcagagtcca cggtcttttc aaaatttaga taaactggct tacattttgt aatgatgtcc 120
ccagacaaca ccccactcca acccattctg tttgttacta ttagtttaca acatgcatgt 180
gcctttactt tcattttcat agtatttaaa aatggaaggg cactcccaaa tttactttaa 240
cccctttaat aatctctctc ctcctgctct ctctggtcct ccagacaact gttgatttac 300
tttcctttat gatggattag tttgcatttt ctagaatttt atatgactga catataaagn 360
ttttatgttt ctcccctttg ggtttcttca tgtggca 397

<210> 541
<211> 248
<212> DNA
<213> Homo sapien

<400> 541
cctagatagg ggattgtgcg gtgtgtgatg ctagggtaga atccgagtat gttggagaaa 60
taaaatgtgc atagtggggg ttttatttta agtttgttgg ttaggtagtt gaggtctagg 120
gctgttagaa gtcctaggaa agtgacagcg agggctgtga gttttaggtg gagggggatt 180
gttgtttgga agggggatgc gggggaaatg ttgttagcaa tgagaaatcc tgcgaatagg 240
cttccggc 248

<210> 542
<211> 366
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(366)
<223> n = A,T,C or G

<400> 542
aatcggccct ctagatgcat gctcgagcgg ccgccagtgt gatggatatc tgcagaattc 60
gcccttgagc gatancgcgg gcaggtccaa ttgatttgat ggtaagggag ggatcgttga 120
ccncgtctgt tatgtaaagg atgcgtaggg atgggagggc gatgaggact aggatgatgg 180
cgggcaggat agttcagacg gtttctattt cctgagcgtc tgagatgtta gtattagtta 240
gttttgttgt gagtgttagg aaaagggcat acaggactag gaagcagata aggaaaatga 300
ctatgagggc gtgatcatga aaggtgataa gctcttctat gataggggaa gtagcgtctt 360
gtanac 366

<210> 543
<211> 460
<212> DNA
<213> Homo sapien

<400> 543

```
cctactatgg gtgttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga      60
gctgttcctc tttggactaa cagttaaatt tacaagggga tttagagggt tctgtgggca     120
aatttaaagt tgaactaaga ttctatcttg ggcaaccagc tatcaccagg ctcggtaggt     180
ttgtcgcctc tacctataaa tcttcccact attttgctac atagacgggt gtgctctttt     240
agctgttctt aggtagctcg tctggtttcg gggtcttag  ctttggctct ccttgcaaag     300
ttatttctag ttaattcatt atgcagaagg tataggggtt agtccttgct atattatgct     360
tggttataat ttttcatctt tcccttgcgg tactatatct attgcgccag gtttcaattt     420
ctatcgccta tactttattt gggtaaatgg tttggctaag                           460
```

<210> 544
<211> 116
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(116)
<223> n = A,T,C or G

<400> 544

```
ccgccagtgt gatggatatc tgcagaattc gccctttgga gngctngcgc ccgggcaggt      60
ctgtttcagc agctcctcct tcttcttccc gcgangatct cgagccttga tcttgg         116
```

<210> 545
<211> 380
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(380)
<223> n = A,T,C or G

<400> 545

```
cgacggatcg atnagctnga tatcgaattc ggacgagcat ggcgtattgc tgcagatatg      60
gattcttcag aatgctccat gacaaatgta ctgacgggaa gncnatctaa aggaggcatt     120
gtnatgagag aaaggtctcg agctccagat aaagagagat acagagttct tggaattgga     180
gttgcagaaa cagtaagaca atcgattgtg gggaagcgtt cttttagaga atctttggcc     240
ttcactccaa agcgttgttc ttcatcaata ataagtagct cgtgccgaat tcctgcagcc     300
cgggggatcc actagttcta gagcggccgc caccgcggag gagctccagc ttttgttccc     360
tttagtgagg gttaatttcg                                                 380
```

<210> 546
<211> 418
<212> DNA
<213> Homo sapien

<400> 546

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ccagggcaat taggcaggag aaggaaataa agggtattca attaggaaaa gaggaagtca      60
aattgtccct gtttgcggat gacatgattg tatatctaga aaaccccatt gtctcagccc     120
aaaatctcct taagctgata agcaacttca gcaaagtttc aggatacaaa atcaatgtac     180
aaaaatcaca agcattctta tacaccaata acagaccaac agagagccaa attatgagtg     240
aactcccatt cacaattgct tcagagaata aaatacctgg gaatccaact tacaagggat     300
gtgaaggacc tcttcaagga gaactacaaa ccactgctca aggaaataaa agaggataca     360
```

aacaaatgga agaacattcc atgctcatgg gtaggaagaa tcaatatcat gaaaatgg 418

<210> 547
<211> 172
<212> DNA
<213> Homo sapien

<400> 547
cctgaggttg ggagaaattt tgtccatttc tttagaacca aaattggcaa ccagagagta 60
tttggatgtt acacaaaata tctagtttcc ctttctagcc taaattgggt tgtttatagc 120
acccgtctct ccatttgaga aaaatggtta ggatgctggt gcagggatga gg 172

<210> 548
<211> 367
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(367)
<223> n = A,T,C or G

<400> 548
ggtctgactt aagagaaaca atggaaggca agaggcagta gaataatata ttcaaaagat 60
gcaaaggaaa aaaacctctc agccacgaat tccttatcca gcaattattt ttcaaaaatg 120
aaaataacac aaagacttag ccagataaac agaaacatta actgaagttg ttgctggcag 180
acctaccata taaaaataaa aaactctaaa aaaattccta tggctaaaag caagttacag 240
aagacagtca cttgaatcca cattttaaaa aaagcactga tatacgtaat attgacatta 300
taaaagacag taaaaatgca tttcttcttt ataataaatn gcttattaaa taacatgtgt 360
ataatgg 367

<210> 549
<211> 418
<212> DNA
<213> Homo sapien

<400> 549
ccaaatcaga acctagagtg agcattctat aaactcacct ttgctttgat ccttgaagat 60
cacaagtttt gatactgttg aaatctctac tctttcaaca ctttaattaa atggcattta 120
gaatttcata tacttctgtt gttgtttcca caatcttaaa ctggatttag aaatacttat 180
aatgtaaatg caagagcttt aacttagtaa ccgtatttcc tattttttgt tgtttttctt 240
ttgccagaat ttctgtttgt ctacaataaa gtccagcgaa atacagtatt tggttaggtt 300
acttgttaac ataaaatttt atcatttgta gagtttttac ttaaccttcc tattctctag 360
tctctataat ctttcaatga agataaccag ttacgaatat ctcctatacc atattagg 418

<210> 550
<211> 234
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(234)
<223> n = A,T,C or G

<400> 550
cctacccgcc gcagnactga tcattctatt tccccctcta ttgatcccca cctccaaata 60
tctcatcaac aaccgactaa ttaccaccca acactcacaa caaaactaac taatactaac 120
atctcagacg ctcaggaaat agaaaccgtc tgaactatcc tgcccgccat catcctagtc 180
ctcatcgccc tcccatccct acgcatcctt tacataacag acgaggtcaa cgat 234

<210> 551
<211> 542
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(542)
<223> n = A,T,C or G

<400> 551
caccccctacc ccnntcctca taaaagttnc tctccctgga tcctcttttt ccctcatgag 60
tgcccggttg cccaagtcaa aaacctggga gtgatataaa ctccccacac atccagtcag 120
tcactcatca actctattga ttctgtctgc taaatatatn tcaattgtat taacttaaac 180
atatgcatan ggcactttct tcttcactgc atttttgtgg gctgcactta cctttcaggt 240
aacgacaaca ctggcccctc ttgcccttct agtcagaagt gccaaaatga tgagagctag 300
ccatgacaaa cccacagcca acattacact gaatgtgcaa aactggaagg gcatccaaac 360
agaggagggg agagaggaat agacaggaag tcaaactgtc tctgtttaca gatgacatgt 420
ttctatatct ataaagcccc atagtcttgg ccccaaagct tcttctgctg ataaacttta 480
gcaaagtctt agcatacaaa atcaatgtgc aaaaattact aacagtccta tacatcaagt 540
ca 542

<210> 552
<211> 411
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(411)
<223> n = A,T,C or G

<400> 552
cctggntgac aaggaggtgc ctgtnatgtg aagatttgag gaaagagcat tccaggcagg 60
gggaaggctt gatgcaaagg gtctactgca ggcattagct gagcttattt aaagatcaga 120
atgaaggcca ttgtggctag aacagagtgg acaggaagga atggtaccag gcaaagctga 180
agaagttggc aggattgagc tctcataant catggcaaag agttcccatt tcattgtttg 240
acggaaataa attggaaggt cttaagtagg agaagatttg attagattta cattttacga 300
agaagcactc tggatgttat gtgaagaaat ggcctttgca gggcaagggt ggaaacaaag 360
agatcagtta ggaaattatt ggagtagctg aggattggat gaggggatgt g 411

<210> 553
<211> 631
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(631)
<223> n = A,T,C or G

<400> 553
ccgggattag aactaaaaca agtgagatca cccctctaat tatttctgaa cttggttaat 60
aaaagtttat aagattttta tgaagcagcc actgtatgat attttaagca aatatgttat 120
ttaaaatatt gatccttccc ttggaccacc ttcatgttag ttgggtatta taaataagag 180
atacaaccat gaatatatta tgtttataca aaatcaatct gaacacaatt cataaagatt 240
tctcttttat accttcctca ctggcccccct ccacctgccc atagtcacca aattctgttt 300
taaatcaatg acctaagatc aacaatgaag tattttataa atgtatttat gctgctagac 360
tgtgggtcaa atgtttccat tttcaaatta tttanaattc ttatgagttt aaaatttgta 420
aatttctaaa tccaatcatg taaaatgaaa ctgttgctcc attggagtag tctcccacct 480
aaatatcaag atggctatat gctaaaaaga gaaaatatgg tcaagtctaa aatggctaat 540
tgtcctatga tgctattatc atagactaac gacntttatc ttcaaaacac caaattgtct 600
ttagaaaaat taatgtgatt acaggtagag g 631

<210> 554
<211> 558
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(558)
<223> n = A,T,C or G

<400> 554
ccaggntagt ctccaactcc tgaccttagc tgatccaccc acctcggcct cccaaagtgc 60
tgggattaca ggcatgagcc actgcgcccg gccaaacttg atatgcattt ttaaataagt 120
taatacatta ttcatggttt agtctcatta tatattctat ggtccacttt gaaatttcat 180
ctaaccaaaa tcatcttcat cctgcaattt gaggtttgga cacaatgggg attgatcagt 240
aatttcttca tatgcccttt ctcaaggaaa tagtttccta tgaaaaaaaa gtcctatgtt 300
ttcatgtaag ttctcttttt ggagaagaaa aggagacatt cttacttagc actctcagtt 360
ttacaaaacg ctgccaacct taaaatttgt ctattgattc ccaaggcaca caaccaatag 420
tctgtcaata acccggaata acatttcttt aaggccccag taactttcac atgtttgggt 480
tccaatcctc acctagaatc ttgttaagaa aagtaaacca ttcactcctc tagaaactct 540
aaggttgctt cttagggg 558

<210> 555
<211> 212
<212> DNA
<213> Homo sapien

<400> 555
ccaggtattt gcataatggc ttttcttctg ttgcctttgt tcctttgtgg ccccagctaa 60
ttgcctgaga gtgccactgt tagttttcaa ctctttctga tagaaaccct gtgtactaac 120
atggaaatct taggtaatct gctttttcaa agcacaatgc agaatttatt ggcggtggtg 180
taactttaag aatatccgag aagccaccaa gg 212

<210> 556
<211> 219
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(219)
<223> n = A,T,C or G

<400> 556
ccatgtgtct atctggagag aaggggaaac agcaagtgca aaggccctga gatggaacat 60
atctggagaa ttcgaagaat ggtaagaagg ccagagtgga gcagaacaag tgtgggagag 120
agttgtagga gatgagatca aaggctagga atgaagtgta aggccatgtc atgtgacctt 180
gtatgtcctt gtaaggcttt tttttttttt tttnancct 219

<210> 557
<211> 482
<212> DNA
<213> Homo sapien

<400> 557
cctactatgg gtgttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga 60
gctgttcctc tttggactaa cagttaaatt tacaagggga tttagagggt tctgtgggca 120
aatttaaagt tgaactaaga ttctatcttg gacaaccagc tatcaccagg ctcggtaggt 180
ttgtcgcctc tacctataaa tcttcccact attttgctac atagacgggt gtgctctttt 240
agctgttctt aggtagctcg tctggtttcg gggtcttag ctttggctct ccttgcaaag 300
ttatttctag ttaattcatt atgcagaagg tatagggggtt agtccttgct atattatgct 360
tggttataat ttttcatctt tcccttgcgg tactatatct attgcgccag gtttcaattt 420
ccatcgccta tactttattt gggtaaatgg tttggctaag gttgtctggt agtaaggtgg 480
ag 482

<210> 558
<211> 679
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(679)
<223> n = A,T,C or G

<400> 558
ctgtnaaaat tctgaaccta tccccaaaag aaaaaccgtg aaatacaagt tttaggaggt 60
ggagcaaaga aaagccaagt tatttaaaac caataaacac aagagacaat tctgctggag 120
aatttacttt ctccaaaaca tcaaatggac tttaaagcag aagaccacat tttatgagaa 180
agttatgtca ctgaaaagct tcatgtaaag tgactttgta aatggaatat ttttaaatga 240
taaaaagaaa ataacttttc caggaatcct ttggagaggc tgataaccag atattaaatt 300
atcaattttg ccaaagtgga cttttaaaaa atgtgttact tttaaaaact aacttgaaag 360
aatttatgag gcaatctatc tgagtatgtt tattgttgct ccattggctt tcaggatttt 420
ggtcatttca ctgttaactc ttacatcaga gaataaagaa aagaaaatga aactttgtta 480
ggaactggga tggaaaatgt agtcccagac agatctactg acctcgactg agtttcagaa 540
atatcccagg attttggtta ttcatgcctt tcttttgtga ctttctttca aattagccaa 600
ttaaagatac cccttcaatc accggtgaca tcagtacaac agtttttcaa cagttttctc 660
tctcctgacc aaacagttt 679

<210> 559
<211> 488

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(488)
<223> n = A,T,C or G

<400> 559
ccccactgta ctccagcctg ggtgacccca tctcaaagaa gaaaagttac cagatgtcat 60
gggtaaaggt tggtcttcaa gtggcctcat aagttgtctt gcatttaaat tcagggaatt 120
cattggacca ataggttaca ttttcgttcc ttttttgttt tggttcatct gttaagcagt 180
gggggcctaa ttactgctcc tttgtaaaaa cacattttcc caaagaacac tgaattaccg 240
ttcaaactgg ttgttgatgg gtaacaaggg ctgtttttgc tgccccaaaa gggcttaaca 300
atttaggcgg atagtttact taaaaaaaaa aatcctttgg agacatactg aaaatgcaaa 360
ctagtttcta aattatcaat tccctacatg aanaagcagt ttgccanagt ttagtctcan 420
aaaatgactg gttggctcta tttaaatcan aacccaattt ctacgcacct gcccgcccgg 480
ccaagggc 488

<210> 560
<211> 602
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(602)
<223> n = A,T,C or G

<400> 560
cctanttaag aattccttgc cttagtggtg aacaaggact aaacacagac aatgggtgaa 60
acacagacgc taattcacat aacagagagt aggcaacctt aagaatgaat tgatgcagac 120
tcctatagaa ttcctctgtt atgactgggt tcttattttc tcctccttgt atgtagttga 180
aatttcatca ttatgaatag ttccttggat ctttttttaa agttgtgaat gcgagtgttt 240
ggctttgtaa tacaactttt tagtatccag aagataacca gtgctctacc aataaagatc 300
ttttgataca aagggtttta acttctgcca gttcttactc atttttttca ggttttttat 360
acatttctta aacaacacat acattatgta aaatataaga attaatgtac attctcaagg 420
ccagattcag tgacaaaatg cactacccga atctagtaac acatttactc cttgctgcat 480
ataagtggcg tgtaagaaat acagggtata ttgttttgtg atccatgcag taaatgttca 540
caaatatcag gcaaacaact agacgntctt cagctactaa aattaactgt cccagtcaca 600
aa 602

<210> 561
<211> 683
<212> DNA
<213> Homo sapien

<400> 561
gtctattttt aaaaagaaag aaaaaaacca cttttttata gtccctagct ttgccatatg 60
cccgccttaa gtggaaggaa agttaatcac ttaactatgt tttataaaaa gaaaaaaggg 120
cttggaatgc tattactgtt cacacaaagt atgattctgt ttgaataagg caaatgctcc 180
ttttttttaaa aaaagacatt actgtaatat caaaaaccgt ggcagtttgt atacaactct 240
gggcttgatt ttttttaaaa aaacagaatg aattgatgtc ttattttata aatgttctat 300
atttattagg agaaaacttt atattgcctt ttttatcaat catgtaacag gcttatagct 360

ttccaacaga gctgcttgcc aaacaatttt ttttgtttat taaacagtgc tgaaacaaac 420
aggatcagca tttacttaag atgttaagaa tgaggacttt taatcagccg aaccaagata 480
ttgttacctg tatgcattcc caaagtctag atgctcagta tgttcagtca tatctttcag 540
aatcagtgaa ccgattaccc tttttttggt attcactcta catctgccaa cctagttcac 600
cttggttttg tgtctgctgt agaagggaac cataacttgg ttaaaccgta gggattatca 660
ttgtatacat gctgtgaaca tgt 683

<210> 562
<211> 420
<212> DNA
<213> Homo sapien

<400> 562
gcactttttt tccagtaagg attcatctct tgctctccta tatggtcatt atattttata 60
ttttacatat ttataaacat gacatatgta tttatgttcc acaaagggct ttgaatagaa 120
tttacacata gagttccctg ggttgatgtg tttatcaaaa tggaagataa agtgaattaa 180
ttacttaaat atttaacact attgaataga aataatttcc ccaatattgc ttcatgattt 240
agacagtcta ttaaatgttt aagcaaggca ctagactaag tttattaaga caaattttgg 300
aatatgtgca gaaatatgac ctggctaata gtacagagtc aaagctggtt gaatggtgtt 360
atatagtgga ttcagattga tgtggcagtg gtggttacac taggggcact aaggttatcc 420

<210> 563
<211> 482
<212> DNA
<213> Homo sapien

<400> 563
ctccacctta ctaccagaca accttagcca aaccatttac ccaaataaag tataggcgat 60
agaaattgaa acctggcgca atagatatag taccgcaagg gaaagatgaa aaattataac 120
caagcataat atagcaagga ctaaccccta taccttctgc ataatgaatt aactagaaat 180
aactttgcaa ggagagccaa agctaagacc cccgaaacca gacgagctac ctaagaacag 240
ctaaaagagc acacccgtct atgtagcaaa atagtgggaa gatttatagg tagaggcgac 300
aaacctaccg ggcctggtga tagctggttg tccaagatag aatcttagtt caactttaac 360
tttgcccaca gaaccctcta aatccccttg taaatttaac tgttagtcca aagaggaaca 420
gctctttgga cactaggaaa aaaccttgta gagagagtaa aaaatttaac acccatagta 480
gg 482

<210> 564
<211> 302
<212> DNA
<213> Homo sapien

<400> 564
ctggaagtga aggtactaat atacaaatgg ctcttgtttc tgaatatgtg atataatttg 60
tgaatctttg gaaactgaat tttttctatg gagtgcaaat atagaagggt tattttacaa 120
tgtttgttgt gaaaagaatt cactttgtaa acaactatta aggctggaag tttagtgaag 180
gtgcatagtt ttgaaagcta cacaggtgaa aaatcaaact tattgtttgt aattttgctg 240
ttacatgtta agttactttg acagcaattt tctaatgata atgtgattta tgatttaaaa 300
gg 302

<210> 565
<211> 554
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(554)
<223> n = A,T,C or G

<400> 565
ccanngtgac atcatggcaa tacagcaaga attctgnnat ttatttagaa gcctcaagga 60
gaaggatcct ggagcccctg aatgagagtt tcttctccat gcctctcccc agtcaaaata 120
catggaaata ttcatagaag cattgtaccc agcatgataa ggaaggatgg agaatggttc 180
cttatatctc tgttcacaag acatcaacac tcttaagtaa ctgtatgaaa taaattctct 240
gctgaaagca aataaaccat ctgaaaggtc ttctggttac ttacacagat ttcctagaga 300
atctgaaatc agcctaacag ggaagattaa tttttaaatg aatccaagtt aatgaaagca 360
aagaactctt atacagaaat acattttcct attataaagc aggactacct tccctaattt 420
ctgatagacc taggacaatt tgaatgggca ttgaaattct tttggttgaa ttacgcaaac 480
aagcaaagga aaagtctcaa ttattattgg aaaatttggg gagagattat tatctcttga 540
tctcctagtn natt 554

<210> 566
<211> 631
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(631)
<223> n = A,T,C or G

<400> 566
ncgaagctgt gaanncattc acacggaatc tgganggtat tactgtaact tcttataata 60
cataatataa aagtttttga aagatataga cacaattaac ccctaaacaa cacactatct 120
gattctcaaa agcaatggct atttaacaag atgtaaaagg acaataacat atcaaagaac 180
tttcacacac ctaaagatag catttagcag caagttagtc agacaaaaca aacataaata 240
tcttcacatt tcctatgttt gtttttaact ttacttcata aagccactga taattgaggt 300
ttctttcaag tataagattt ctaaaattaa aaactgtttt tgacatattt ttataaagaa 360
ataaaaagca aaacgcaatc caactattta tatgagtccc tcttctccaa cagctttaga 420
tgtttttctg agtacttttt acacagaata tttttattaa aatcagttct aattcattta 480
tgcagattag gggaaaatga ttcataataa attaacttta aaattacctt ctatctgctt 540
ctacctctat ccccccatca ccaccaaatc tgttgctaca gtgaactgta gccaatgtct 600
gtttgagggg gcccaaagca tctggtaatc t 631

<210> 567
<211> 510
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(510)
<223> n = A,T,C or G

<400> 567
cctatnatag cttctctagc tatcatactc caatcagcna aaaatgagaa aatgttgaga 60
aatagaagat aattcctcat ttaaggncac cttctanaat ttgtgcttaa nantctgttt 120

tcttctcatg ggccagcact tcggcaactg ggaaaaatta ngngtacagg gatctaggna 180
atactgttta tttgagcaat aatatattgn gctaacgttc aggcatccta ttactgagaa 240
ataagggaaa atgagtgtaa agtacaacta agagtctcgg ctacagggaa aaataccatc 300
agttaaatat ccatagtcct agagcattta tgtaaaactg caatttgaat cctgcaatac 360
atttggctt tttcctcagt gataccatgt gtgggaagtt gttctgtcaa ggtgggtcgg 420
ataatttgcc ctggaaagga cggatagtga ctttcctgac atgtaaaaca tttgatcctg 480
aagacacaag tcaagaaata ggcatggtgg 510

<210> 568
<211> 180
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(180)
<223> n = A,T,C or G

<400> 568
ttaatntgac ncacgcttat gcggaggaga atgntttcat gttacttata ctaacattag 60
ttcttctata gggtgataga ttggtccaat tgggtgtgag gagttcagtt atatgtttgg 120
gatttttag gtagtgggtg ttgagcttga acgctttctt aattggtggc tgcttttagg 180

<210> 569
<211> 237
<212> DNA
<213> Homo sapien

<400> 569
ccaattgatt tgatggtaag ggagggatcg ttgacctcgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt caggaaaagg 180
gcatacagga ctaggaagca gataaggaaa atgactatga gggcgtgatc atgaaag 237

<210> 570
<211> 352
<212> DNA
<213> Homo sapien

<400> 570
ctgtctctcc atttagagcc ccagttggtc ctgacctctt acaaatttgg tgttttcact 60
ttgatgttta tgaaccgatt gcattaaaaa tgcaggataa tgattcaggg ttagagaaac 120
tattatttat acaaatgtgg ttaacacctc atcattttaa attggctgtg ctaataatgc 180
tcattgtgct cttcagggtt atgtgtgtgt gtgtgtgtgt gttttgcctg aatctgcaac 240
ctacatttgc tctggcagta tgttgagtat atgctagaat agaatggacc taggcaactc 300
taaggtccta caactaaata cacttactta ggaaacctcc taaataagta gg 352

<210> 571
<211> 402
<212> DNA
<213> Homo sapien

<400> 571
ctgattttaa caataactac tgtgttcctg gcaatagtgt gttctgatta gaaatgacca 60

atattatact aagaaaagat acgactttat tttctggtag atagaaataa atagctatat 120
ccatgtactg tagtttttct tcaacatcaa tgttcattgt aatgttactg atcatgcatt 180
gttgaggtgg tctgaatgtt ctgacattaa cagttttcca tgaaaacgtt ttattgtgtt 240
tttaatttat ttattaagat ggattctcag atatttatat ttttatttta tttgtttcta 300
ccttgaggtc ttttgacatg tggaaagtga atttgaatga aaaatttaag cattgtttgc 360
ttattgttcc aagacattgt caataaaagc atttaagttg aa 402

<210> 572
<211> 70
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(70)
<223> n = A,T,C or G

<400> 572
tggatccgag ctcggtacca agcttggcgt aatcatggtc atagctgttt cctgtgntcg 60
ttttacaacg 70

<210> 573
<211> 423
<212> DNA
<213> Homo sapien

<400> 573
ccaatggttt cttagtgaaa gagtacacta gctctgaatg caatgccctc agaaagatat 60
cattcataga gacatacaaa gcacatggca acatgacatt ggaatacacg attctgagca 120
tcttcattca tgaccaacct ggctatagat ttcagatgtc ctcttggctc gaaggatatc 180
tgggatatcc atgctcactt gcattccttt ccctttaatt tcattttcta agtccttctt 240
gtattgtttc taaaagaaca gaaaataatc ttggagcttt gcttaagctt taatagcgat 300
gttgaaattt acatgtttga atctcaaagc cacccatgtg gaaagaaaac ttatgctctt 360
tccagctatg attcacggca tttattttaa actttgtatc ttgctgctgt cttacctggc 420
tgg 423

<210> 574
<211> 129
<212> DNA
<213> Homo sapien

<400> 574
ctgttaaaag aacaaactta gcaatatata acagtttgct aacaggattt ttgactattc 60
actttgcgag ttatttttaa aaatccactt ttttactgag tcttactaca taccaggcac 120
tgtacttgg 129

<210> 575
<211> 684
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(684)

<223> n = A,T,C or G

<400> 575
ccagatntga cttttcaaaa ctactcacat tgtgaaaaan gcaggaacaa atctagtttc 60
aagttcagca tgccgttccc tgtttaattc ataaaacaca actggcagaa gtattacttg 120
aagcaaaaca aaagtaacgt gggaacttgc ttatttgcta agccacaatg tatttttcca 180
ggaatagcat aaatttgcca tctttcttgt gtctatggaa aaggggttta gaattgtttc 240
actaaaaatt aaatttctat attgtcaaac atgattgtat actcaaattt taaaatgtga 300
agggaacact tactaagcat ttcctgggta tgccactata ttaagtccta gtaatatgat 360
atagtttatt tcaatttttt ttcaactcat acttccttta aaatagcact gaccaaaaga 420
aagttaacat gagcttcatg tacaattttt aatctttttg cagaaaaata aactgagaaa 480
ggctaaaatt gttttattta agccactata ccaagacata ttgatttcac caatataaaa 540
attgagatag tttacatttt ttggtacatc tttaaaatct ggtatgtatt tttatactga 600
cagcacatct caatttggac aagctacatt tccagggctc aatagtcacc atgaatctca 660
attgtaatca aagaggttgg cctg 684

<210> 576
<211> 134
<212> DNA
<213> Homo sapien

<400> 576
ccttatttct cttgtccttt cgtacaggga ggaatttgaa gtagatagaa accgacctgg 60
attactccgg tctgaactca gatcacgtag gactttaatc gttgaacaaa cgaaccttta 120
atagcggctg cacc 134

<210> 577
<211> 133
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(133)
<223> n = A,T,C or G

<400> 577
ctgtctctcc attnagaagc cccantnggt cctnacctct tacaaatttg gtgttttcac 60
tttgatgttt atgaaccgat tgcattaaaa atgcaggata atgattcagg gttaganaaa 120
ctattattta tac 133

<210> 578
<211> 200
<212> DNA
<213> Homo sapien

<400> 578
cctcaaatct atcttcaaag gtgacccagc aatcagtgtc aatgccttta ctgtagttaa 60
cctggtaatt tcattcttta gtctctccaa gaaaatctga agtgtattag gcaagtcaga 120
acccaaattg tctccaaggt tgcaaataat ttgtcccata caggaaatag ccctttcctt 180
gacttcctga tcaatgtcag 200

<210> 579
<211> 402

<212> DNA
<213> Homo sapien

<400> 579
ctgattttaa caataactac tgtgttcctg gcaatagtgt gttctgatta gaaatgacca 60
atattatact aagaaaagat acgactttat tttctggtag atagaaataa atagctatat 120
ccatgtactg tagtttttct tcaacatcaa tgttcattgt aatgttactg atcatgcatt 180
gttgaggtgg tctgaatgtt ctgacattaa cagttttcca tgaaaacgtt ttattgtgtt 240
tttaatttat ttattaagat ggattctcag atatttatat ttttatttta tttgtttcta 300
ccttgaggtc ttttgacatg tggaaagtga atttgaatga aaaatttaag cattgtttgc 360
ttattgttcc aagacattgt caataaaagc atttaagttg aa 402

<210> 580
<211> 245
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(245)
<223> n = A,T,C or G

<400> 580
ccaattgatt tgatggtaag ggagggatcg ttgacctcgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgan gactaagatg atggcgggca ggatagttca gacngtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg 180
gcatacagga ctaggaagca gataaagaaa atgactntta gggcgtgatc atnaaanggg 240
ataaa 245

<210> 581
<211> 294
<212> DNA
<213> Homo sapien

<400> 581
tgcagcgcaa gtaggtctac aagacgctac ttcccctatc atagaagagc ttatcacctt 60
tcatgatcac gccctcatag tcattttcct tatctgcttc ctagtcctgt atgccctttt 120
cctaacactc acaacaaaac taactaatac taacatctca gacgctcagg aaatagaaac 180
cgtctgaact atcctgcccg ccatcatcct agtcctcatc gccctcccat ccctacgcat 240
cctttacata acagacgagg tcaacgatcc ctcccttacc atcaaatcaa ttgg 294

<210> 582
<211> 230
<212> DNA
<213> Homo sapien

<400> 582
gaggtcgccc tcatagtcat tttccttatc tgcttcctag tcctgtatgc ccttttccta 60
acactcacaa caaaactaac taatactaac atctcagacg ctcaggaaat agaaaccgtc 120
tgaactatcc tgcccgccat catcctagtc ctcatcgccc tcccatccct acgcatcctt 180
tacataacag acgaggtcaa cgatccctcc cttaccatca aatcaattgg 230

<210> 583
<211> 481

<212> DNA
<213> Homo sapien

<400> 583
ccaagggtgt tctgcctgcc tcagcctccc aaagtgctgg gattacaggt gtgagccact 60
gtgcctgacc acaggaaaac ttatttaaat gagagatttg actcgaaaga tcccgttttt 120
ttaaggctct tagttcttaa aagcggcaca taatagaatt agtataatcc caaataaatt 180
ttcagtagat ttttggtgta acttgagaag atgattctgt catttttagt gacaatttaa 240
aagacctgaa attgtctaca gccatagaaa gtgaactact gatagttgtt tctgtaaagt 300
tttattggaa cacaaccaca cctatttgtt catctgtatt gtctttggtt actttgtgca 360
gagaccatgg cccacaaacc taaaacattc actttctagc tctttaagaa ataattggcc 420
cactgacacc ctggtcttaa ggtctagacc aattatttct caagagtatt agctgaatca 480
g 481

<210> 584
<211> 306
<212> DNA
<213> Homo sapien

<400> 584
ccaattaaga gctaaattta caaaataatc tctatcagga ggctttaagg tttaatgtct 60
ctaaagtccc tatggatata agaggcttga atgtactgaa ttcaaatttg gtttttaaat 120
gttataatag tttaggcccg agagccacat atttctgtct aagaatagaa agcatagcta 180
gctgcccaca cagaatattc atatagaggt gggggcaag aacaaaattt attcatttga 240
tacatagaaa tgggactact tagaatagac tcataataga aagcatcatc tggtttctca 300
tctcag 306

<210> 585
<211> 308
<212> DNA
<213> Homo sapien

<400> 585
ccagaatggt acagagtgga gggtgttctg ctaatgactt cagagaagta tttaagaaaa 60
acatagaaaa acgtgtgcgg agtttgccag aaatagatgg cttgagcaaa gagacggtgt 120
tgagctcatg gatagccaaa tatgatgcca tttacagagg tgaagaggac ttgtgcaaac 180
agccaaatag aatggcccta agtgcagtgt ctgaacttat tctgagcaag gaacaactct 240
atgaaatgtt tcagcagatt ctgggtatta aaaaactaga acaccagctc ctttataatg 300
catgtcag 308

<210> 586
<211> 416
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(416)
<223> n = A,T,C or G

<400> 586
cctgtctttg aatggatgaa ataggttaat aaaaaacatc actgtttaaa aactagaaca 60
ctgaaaaatt ctaggaaagc ttattttccc ttatattttt atggnacttt caacacttna 120
caacactatt tnaattaann tttnttctag agtttatann atatcagtac attcttttct 180

gtggatgcaa taatatagaa tcttattnca aatcttactg gcaggntctn ttaaattctt 240
caacggntgn catagtgatt aaccaaaatt agttatgatt tctgcctatc tgtgtgagaa 300
cttacagggg aaattgttct aaacctgagg aacatgaagt aactgtactg cacactccaa 360
atgatgacag tcattttata tcaccttcaa ttacccaaca gcttttaata gtctgg 416

<210> 587
<211> 382
<212> DNA
<213> Homo sapien

<400> 587
cctactatgg gtgttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga 60
gctgttcctc tttggactaa cagttaaatt tacaagggga tttagagggt tctgtgggca 120
aatttaaagt tgaactaaga ttctatcttg gacaaccagc tatcaccagg ctcggtaggt 180
ttgtcgcctc tacctataaa tcttcccact attttgctac atagacgggt gtgctctttt 240
agctgttctt aggtagctcg tctggtttcg gggtcttag ctttggctct ccttgcaaag 300
ttatttctag ttaattcatt atgcagaagg tataggggtt agtccttgct atattatgct 360
tggttataat ttttcatctt tc 382

<210> 588
<211> 307
<212> DNA
<213> Homo sapien

<400> 588
cctactcttc tccgtccatt gtactatctg cccgtggtgg ggatggcagt aggatcatat 60
ttgatgactt ccgagaagca tattattggc ttcgtcataa tactccagag gatgcgaagg 120
tcatgtcctg gtgggattat ggctatcaga ttacagctat ggcaaaccga acaattttag 180
tggacaataa cacatggact aatacccata tttctcgagt agggcaggca atggcgtcca 240
cagaggaaaa agcctatgag atcatgaggg agctcgatgt cagctatgtg ctggtcattt 300
ttggagg 307

<210> 589
<211> 89
<212> DNA
<213> Homo sapien

<400> 589
cctgggtgat tgaggatgca atgagctgtg attgtgccac cacactccag cctgggcaat 60
acagcaagac tgtctcaaaa aaaaaaaaa 89

<210> 590
<211> 456
<212> DNA
<213> Homo sapien

<400> 590
cctcagttct tgattgtggt tgacggggcg tcaccatgaa ggagcccatt tagtataaag 60
cttccaacct tttctcttaa tcgtttcttt aatcttttaa accatcttca agtgcatagg 120
ggagtttccg atgccagagg atgaaagcaa gtgctctctc caccctctcc tcccagagtg 180
aaaacaaatc cttttgctga tacttgtttc aaaagcatcc attgtaaagc ttctcagtga 240
cacaaaatac tgagaggtaa ctttttatca atcaaaccac ataccccaat ttaacacctt 300
tcaatgctct gaattcaact gacagactaa agggtgtttc ctgtaacagt ctgaaatatt 360
aagtgttttt tttgttttgt ttttaaatct tatttcagaa aacttcctct tggggtagga 420

aagtacacat gaagcagcaa agtaacgaag aaaaac 456

<210> 591
<211> 289
<212> DNA
<213> Homo sapien

<400> 591
ccaattgatt tgatggtaag ggagggatcg ttgacctcgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg 180
gcatacagga ctaggaagca gataaggaaa atgactatga gggcgtgatc atgaaaggtg 240
ataagctctt ctatgatagg ggaagtagcg tcttgtagac ctacttgcg 289

<210> 592
<211> 435
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(435)
<223> n = A,T,C or G

<400> 592
cgcgttagat gcgccttttc cggcctgtgc gtctgctctg gttcctctca ggcagcaaag 60
ctggggaagg aagctcaggc aggagcctcc ccgacaccac agcggcacaa gcagcagcta 120
aagcaccgca ctttgctctg ctaacctttt acttaaatga ggttttgcca aatccacatc 180
tggaaccgca tcacacccat ttgcaaggat gtttgttctt tgatgaaact gcatctctac 240
tgcacatgan ggctttcatt gtaggacaag aggagagttc gtttattttt gtaactgttt 300
tacatgttcc gattanttaa tcggnagctt atgtcatttg ctatgcctgt tgtcttctaa 360
tctctcctta ctaaaacatt acttcaaatt tnaattgacc cttgtttata atttatttaa 420
cgggatttgn gtgtc 435

<210> 593
<211> 633
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(633)
<223> n = A,T,C or G

<400> 593
ctgtttagtc agataattgt gtccgaattg attangaaaa taatagacca gccataaagc 60
agcataaaat attatgaaac tattccagaa gttcagtaat atctttggga cctgctcata 120
gcccaagttt tgtgaatact tttgtagtta aaaaaaattt ttactttacc agggcattgc 180
aattcttttc catcagtgaa tttcattcta cagacttttc agagcatctc ataatcagtc 240
aacaaatcta tttcaaatgt gtttgttact aagcaacggt tgctaagagc ttctgtaatt 300
aagatgaaag ttccaaggta acaatgccca aacacagcac cattttcacc attttctgat 360
aatgcaggag taggatggct aaaagtgaaa gaagaatcta ctctatggaa agcatggcac 420
ctgaaatttc tgaagatatt ggctgtcctc tagcttatat gagagagagt gtttgtgctt 480
tactaatcaa ccagtcattt ttttcttgtg tggctgaaat gtacattcca gacatgaaca 540

ggtagagtat gtgttggggg caggtttata ctgcatgggt gtgctgagac agggccacgt 600
ggtgatgtaa atgatgctgn ctgacacgtg cag 633

<210> 594
<211> 501
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(501)
<223> n = A,T,C or G

<400> 594
cctttacaag atgctggtac cttgatcttg gacngggcag gctccaagat ggaaagaaag 60
tgagcatctg ctttttaggg attatccagt ctatactact ctgttctagc cacacaaaac 120
aggttaagac agaaattggt accaagagtg gggtgttact acagcaaata cctgaaaatg 180
tagaagaggc tttgaaatgt ggtaattgga agaagctggt agaatttgga ggagtaggct 240
agaaaatgtc tgtattttca tgaatggagc attaagaata attccggtga ggccataggg 300
aaagtctaaa acttttcaga aattatgtaa gcgattgtga ttagtaggtt ggtagaaata 360
tagacagtaa aagcaattct gatgtggttt cagaggaaaa tgaaaaatat tagaaactga 420
aggaaggggc atccttgcta taaactggca aagaacttgg ctgaaatgtc tccatgtcca 480
agagatttat ggcagaaatg t 501

<210> 595
<211> 383
<212> DNA
<213> Homo sapien

<400> 595
ctggtcacca tcatcccttt aatcaactca cacctgttta aagagtgttt ctgatttgac 60
cttcatccct tagtttactg gcgttaaaaa aagtctcagc aattttcatt atttctcgtg 120
ggtctcatta tcaaaccttt acttatttcg gcatatttcc tctgggcttc ttctagtttc 180
tgccttacaa gcaatgctgt tctgtaaatt tattgaaacc tctggaacat ttcaccttta 240
gagatggagg atggaaggat tggtaccaga agagggctaa gatacgtttt ctgtcttgag 300
ctgaaagcac agtctactct ccttcgtttt gtcgatgaga aagttgaggc cagaggggag 360
gtgacatgtt tagagtcacc cag 383

<210> 596
<211> 266
<212> DNA
<213> Homo sapien

<400> 596
ccatggctag gtttatagat agttgggtgg ttggggtaaa tgagtgaggc aggagtccga 60
ggaggttagt tgtggcaata aaaatgatta aggatactag tataagagat caggttcgtc 120
ctttagtgtt gtgtatggct atcatttgtt ttgaggttag tttgattagt cattgttggg 180
tggtaattag tcggttgttg atgagatatt tggaggtggg gatcaataga gggggaaata 240
gaatgatcag tactgcggcg ggtagg 266

<210> 597
<211> 383
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(383)
<223> n = A,T,C or G

<400> 597
ctggtcacca tcatcccttt aatcaactca caccngttta aagagtgttt ctgatttgac 60
cttcatccct tagtttactg gcgttaaaaa aagtctcagc aattttcatt atttctcgtg 120
ggtctcatta tcaaaccttt acttatttcg gcatatttcc tctgggcttc ttctagtttc 180
tgccttacaa gcaatgctgt tctgtaaatt tattgaaacc tctggaacat ttcaccttta 240
gagatggagg atggaaggat tggtaccaga agagggctaa gatacgtttt ctgtcttgag 300
ctgaaagcac agtctactct ccttcgtttt gtcgatgaga aagttgaggc cagaggggag 360
gtgacatgtt tagagtcacc cag 383

<210> 598
<211> 266
<212> DNA
<213> Homo sapien

<400> 598
ccatggctag gtttatagat agttgggtgg ttggtgtaaa tgagtgaggc aggagtccga 60
ggaggttagt tgtggcaata aaaatgatta aggatactag tataagagat caggttcgtc 120
ctttagtgtt gtgtatggct atcatttgtt ttgaggttag tttgattagt cattgttggg 180
tggtaattag tcggttgttg atgagatatt tggaggtggg gatcaataga gggggaaata 240
gaatgatcag tactgcggcg ggtagg 266

<210> 599
<211> 294
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(294)
<223> n = A,T,C or G

<400> 599
ccaattgatt tgatggtaag ggagggatcg ttgaccacgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg 180
gcatacagga ctaggaagca nataaggaaa atgactatga gggcgtgatc atgaaaggtg 240
ataagctctt ctatgatagg ggaagtagcg tcttgtagac ctacttgcgc tgca 294

<210> 600
<211> 213
<212> DNA
<213> Homo sapien

<400> 600
agatattggg ctgttaattg tcagttcagt gttttaatct gacgcaggct tatgcggagg 60
agaatgtttt catgttactt atactaacat tagttcttct atagggtgat agattggtcc 120
aattgggtgt gaggagttca gttatatgtt tgggattttt taggtagtgg gtgttgagct 180
tgaacgcttt cttaattggt ggctgccttt agg 213

<210> 601
<211> 471
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(471)
<223> n = A,T,C or G

<400> 601
ncctactatg ggtgttaaat tttttactct ctctacaagg ttttttccta gtgtccaaag 60
agctgttcct ctttggacta acagttaaat ttacaagggg atttagaggg ttctgtgggc 120
aaatttaaag ttgaactaag attctatctt ggacaaccag ctatcaccag gctcggtagg 180
tttgtcgcct ctacctataa atcttcccac tattttgcta catagacggg tgtgctcttt 240
tagctgttct taggtagctc gtctggtttc ggggtctta gctttggctc tccttgcaaa 300
gttatttcta gttaattcat tatgcagaag gtataggggt tagtccttgc tatattatgc 360
ttggttataa tttttcatct ttcccttgcg gtactatatc tattgcgcca ggtttcaatt 420
tctatcgcct atactttatt tgggtaaatg gtttggctaa ggttgtctgg t 471

<210> 602
<211> 482
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(482)
<223> n = A,T,C or G

<400> 602
tgagcataca gcaataaaaa taacataatt tntatgtgta caatatttat ggaatacgtt 60
actggaacag ataaataatt tagttaataa catgacaaag aacagaaatt gtatacacta 120
tacagcatag taatagaata atgaatgatt aaagttatta atattaggta gaaaatgaag 180
ggtatctttg agagcagaac tcaaggaagc aagcaatttg ccttatgagg aaagagttac 240
ctgtggataa aggagaaact gaaaaattta caagtcaaga ctttttgagc aaaaacaaaa 300
atatgactat gagtcaccaa ttcagtacag tgaaaaaaaa gttgaagaga tatcttggaa 360
gtaaaccatg ttgtggaaga gcagggtttt gataatcatg ggattattct gaatgaattt 420
taaatgcgat aggaatatat gagataattt caccagagaa taatatgatc atgtttgcat 480
tt 482

<210> 603
<211> 372
<212> DNA
<213> Homo sapien

<400> 603
gttccaacct tcatttctga aactgttcta gagcactttg tctttctcgt agttcataac 60
ttaccccttc agtctagaat tagaattaca ttatctgttt tactacttta ctagactgta 120
agctcctaga agataaggac tagggagttc atctctgtat tccaccagaa ggtacagtga 180
ctcataacta gagtctttag atgaaactta ctgagttgaa taacttaata tatttctgtt 240
ttcattccca agggaggcca tgtctggaga tagaccttga atttaataaa ttttaggcac 300
tataccattt cagtggagaa aattgttggg aaatttgggg ggatggatat ataaggggga 360

ggaagtcact gg 372

<210> 604
<211> 468
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(468)
<223> n = A,T,C or G

<400> 604
gcngttttga gtgagtttct taatcctgag ttctggnttg attgcactgt ggtctgagag 60
atagtttgtt ataatttctg ttcttttaca cttactgagg agagctttac ttccaagtat 120
gtggtcgatt ttggaatagg tgtggtgtcg tgctgaaaag aatgtatatt ctgttgattt 180
ggggtggaga gttctgtana tgtctattag gtccgcttgg tgcagagttg agttcaattc 240
ctggatagcc ttgttaactt tctgtctcgt tgatctgtct aatgttgaca gtggggtggt 300
aaagtctccc attattattg tgtgggagtc taagtctctt tgtaggtcac taaggacttg 360
ctttatgaat ctgggtgctc ctgcattggg tgcacatata tttaggacag cnagctcttc 420
ttgttgaatt gatcccttta ccattatgta atggccttgn ctcttttg 468

<210> 605
<211> 288
<212> DNA
<213> Homo sapien

<400> 605
ccaattgatt tgatggtaag ggagggatcg ttgacctcgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg 180
gcatacagga ctaggaagca gataaggaaa atgactatga gggcgtgatc atgaaaggtg 240
ataagctctt ctatgatagg ggaagtagcg tcttgtagac ctacttgc 288

<210> 606
<211> 572
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(572)
<223> n = A,T,C or G

<400> 606
gaatnaaatg aatgaaatag aaaatataat tgagagcttc aacaacagac tataccaaat 60
ggaggaaaaa atttctgaac ttgaagatag atcttttgaa ataacacaag cagtggcaaa 120
aatgaattaa aaagaataag gaaagcctaa aggatttatg agatatcatt aagcaagcaa 180
atattcatac tatgggcatt ccagatggaa aaaagaaggg taaaggtgag gaaatcatat 240
ttaatgaaat aatagcagaa aatttccgga gtcttgggag agagatgagc atttaggtcc 300
agggagctca aagaacccca aacagattca acccaaacag gtcctctctg gagcccaaca 360
tagtcaaatt gtaataagta aaagacaaag aattccaana agcattcaag agaaaagagt 420
caagtcataa ataagggaat ctccattagg ctaacagcag atatctcagc agaaagctta 480
cangccanga gagaatggga tgatatattc aaagtacttg aaagcagggg tnggggaaac 540

cctgctagct aaaaatatta taccettgca aa 572

<210> 607
<211> 178
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(178)
<223> n = A,T,C or G

<400> 607
ctcggggtaa tctcccagca agaggtcagg tcctggntgt gcgtcccagg gtgtcagtga 60
aattggctgc tcccctgacc cagggcacct tcatgcgtct tcacagcagg actactgtga 120
ccaaggccag acctttcatc tttcaaaaga ctttgactaa aaatgcttta aaaaagca 178

<210> 608
<211> 416
<212> DNA
<213> Homo sapien

<400> 608
cctgtctttg aatggatgaa ataggttaat aaagaacatc actgtttaaa aactagaaca 60
ctgaaaaatt ctaggaaagc ttattttccc ttatattttt atggtacttt caacacttaa 120
taacactatt tcaattaagt ttctcctag agtttatagt atatcagtac attcctttct 180
gtggatgcaa taatatagaa tcttattcca aatcttactg gcaggttctc ttaaattctt 240
caacggctgt catagtgatt aaccaaaatt agttatgatt tctgcctatc tgtgtgagaa 300
cttacagggg aaattgttct aaacctgagg aacatgaagt aactgtactg cacactccaa 360
atgatgacag tcattttata tcaccttcaa ttacccaaca gcttttaata gtctgg 416

<210> 609
<211> 648
<212> DNA
<213> Homo sapien

<400> 609
ctgatctctc agcagaaact cttcaaacca gaagagagtg gggccaata ttcaacattc 60
ttaaagaaaa taattttcaa cccagaattt catatccagc caaactaacc ttcacaagtg 120
aaggagaaat aaaatccttt acagacaagc aaatgctgag agattttatc accaccaggc 180
ctaccctaaa agagttcctg aaggaagcac taaacatgga aaggaacaac cagtaccatc 240
gaggctagga agaaaccgca tcaactaagg agcaaaataa ccagctaaca tcataatgac 300
aggatcagat tcacacataa cgatattaac tttaaatgta aatggactaa atgctccaat 360
taaaagacac agactggcaa attggataaa gagtcaagac ccatcagggt gctgtattca 420
ggaaacccat ctcaccgtgc agagacacac ataggctcaa aataaagggc tggaggaaga 480
tctaccaagc aaatggaaaa caaaaaaagg caggggttgc aatcctagtc tctgataaaa 540
cagactttaa accaacaaag atcagaagag acaaagaagg ccattacata atggtaaagg 600
gatcaattca acaagaagag ctaactatcc taaatatata ttgcaccc 648

<210> 610
<211> 310
<212> DNA
<213> Homo sapien

<400> 610
ccagctcttc tctgtcacat tcctatttct gacttctgcc tggctttcag tttctgcccc 60
accttggctt tttcccagct tgaacctaat agaactccag agtttggggg gaggcccagc 120
cctttgtttt ctgctcttga agcatattca cacataaaaa gttgtattct cttacacaaa 180
ctgttttgag gctcttaccg tagtcgaagg tatcttagat cttccttagt gatctcatta 240
agaatatccg aaagtgtata accctcttca acaatctgaa acaaagatca gatccttaag 300
agctgagcag 310

<210> 611
<211> 254
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(254)
<223> n = A,T,C or G

<400> 611
ctgtttttac atctaaagca atagactaga actgaattnt cttctacata gtaaaatcac 60
aattgtggaa ttacaggaat tctggtgata ttaaggtgaa acaacaaaac acaaaaggcc 120
ctattttaac agttgatgtg acagtaagtt ttaatagaac ctgtaacttc attttggaaa 180
tgcttctcca ccaaataagg ccttttttccc ctatttaagg agccagatgg attgaaagat 240
gtggaaatag gcag 254

<210> 612
<211> 225
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(225)
<223> n = A,T,C or G

<400> 612
ctgactatat catgtcacca tcatagccaa tacaacattn ttgccatact tcctaaaaac 60
cttttcgcat acactgatca tgctacttat cagcactttc taacatcctg accaaacaga 120
cacccacacc tcttatagag tacactgtga gagaataaca tggacttgat atggcatcac 180
acttgtttta aagcaaaaaa aaaagaaaaa gaaaagaaaa aaaaa 225

<210> 613
<211> 471
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(471)
<223> n = A,T,C or G

<400> 613
ccatcagact tcttgggtgc ctggctatat tcaatgtgaa gtaaaaaata tcccaagtct 60
tacaccaaaa tagaggctct gacttagaag tatgctttta gctttctttt taaataagac 120

attctggaag aaaaaaaaag aaaaaggaaa gaaaatcaag tttgaaacac agttaacact 180
tattttggca agaaagcaac caaaatctaa aaagcataaa ctatgngtcc aaatgnaaaa 240
ggnattacag aacaaactgc aagaggggaa aattaaagcc ncactgaacg aaaaaataca 300
gtatgtctaa cattttggaa ttgnaattta aaccctaagg gcaaaagctg aaaaatcatg 360
cttanacctn ggncgngacc acnctaaggg cgaattccan cacactggcg gncgttacta 420
gtggatccna nctcggtacc aagcttggcg taatcctngg catagctgtt t 471

<210> 614
<211> 421
<212> DNA
<213> Homo sapien

<400> 614
gttatttttt agaatggctc tcccatcttg agtatgtgtg atgtttcctc atgtatgaat 60
gaagcatata catctttgtc agaagtatcc cagaagcaat tctgtactct cctcattatg 120
ttctattggg tgggccatgg tttttgattt gtctcattac tgatgatggt tacttttatt 180
atttgataaa ggttgtatat aacttatcta ttatggcata atacattagc taaaaccttg 240
gcggtgtaaa acagcagata cttacgtttc tcataggaat ggctctattg agtacctctg 300
tctcaaggct tctcaagagt ttgtagctac cttgttggct ggggttgcgg tctgacctaa 360
aggcttagtt agggggtggt agaaatcttc catatgttct ttgctacgtg gacctcacag 420
g 421

<210> 615
<211> 242
<212> DNA
<213> Homo sapien

<400> 615
cctcctattt attctagcca cctctagcct agccgtttac tcaatcctct gatcaggatg 60
agcatcaaac tcaaactacg ccctgatcgg cgcactgcga gcagtagccc aaacaatctc 120
atatgaagtc accctagcca tcattctact atcaacatta ctaataagtg gctcctttaa 180
cctctccacc cttatcacaa cacaagaaca cctctgatta ctcctgccat catgaccctt 240
gg 242

<210> 616
<211> 392
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

<400> 616
cctaatttgt agattgtgaa agcagctttt agtttaactt atttacagac cccttataat 60
taccatgttt tttttttnt tcctaaatct nttggttcag cttgngaatn ttacgtgccc 120
gtaaagtngg gatgttgaat nggcccttnt ttgttctggc agngagtcaa gngtccanca 180
ttttttcata agngtttttt aaaatngttc tccancattt tatggctcct ccctcccatg 240
tcctcaaacc cagcaaaagc gtanaggcan aattanagga cccncccggg cggccgntaa 300
gggcnaattc cagcncactg gcggccgtta ctagnggatc cnagctcggn nccaagctng 360
gcgtaatcat ggncatagct gtttcctgtg an 392

<210> 617

<211> 215
<212> DNA
<213> Homo sapien

<400> 617
cctactatgg gtgttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga 60
gctgttcctc tttggactac cagttaaatt tacaaggga tttagagggt tctgtgggca 120
aatttaaagt tgaactaaga ttctatcttg gacaaccagc tatcaccagg ctcggtaggt 180
ttgtcgcctc tacctataaa tcttcccact atttt 215

<210> 618
<211> 433
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(433)
<223> n = A,T,C or G

<400> 618
cttttgtntg cctgttttgt ggactggctg gctctgttag aactctgtcc aaaaagtgca 60
tggaatataa cttgtaaagc ttcccacaat tgacaatata tatgcatgtg tttaaaccaa 120
atccagaaag cttaaacaat agagctgcat aatagtattt attaaagaat cacaactgta 180
aacatgagaa taacttaagg attctagttt agttttttgt aattgcaaat tatatttttg 240
ctgctgatat attagaataa tttttaaatg tcatcttgaa atagaaatat gtattttaag 300
cactcacgca aaggtaaatg aacacgtttt aaatgtgtgt gttgctaatt ttttccataa 360
gaattgtaaa cattgaactg aacaaattac ccataatgga tttggttaat gacttatgag 420
caagctggtt tgg 433

<210> 619
<211> 259
<212> DNA
<213> Homo sapien

<400> 619
ctgcagtgtc cctttttata tcatgctagt gttgagacat acttgactaa cttgggaaca 60
gttcgatata ttgacaaccg tcaacttaag aaaatcaaca gcttttggcc ccagcgtcca 120
agtgaacttt tcatggagtg cagaatctca aatggacaaa atactttgtc tttttaaata 180
ctgaaaattt aattattagt actatgactg aaagattctt catggctaaa aagctctgca 240
tcaaactcaa ttcaggagg 259

<210> 620
<211> 393
<212> DNA
<213> Homo sapien

<400> 620
ccaccaaagc cacacggaga ttctgtcagg cgctgagaca ccacagcctt ttcaatctta 60
gggaaagaaa tcaagtcata taaattaata tcaacaggta aggtcattga gcaattgtct 120
ttcaactgtc taagacttta tcacttaaga tcataaacac agaagcaggt cataaaaata 180
gcttttctta aggtttagga gaatttgtag gggcacttac ttgataatct gaattttcta 240
gtcagaagtt taaataccac cttttaaaaa cataaaattt aatttgtaac aagttattaa 300
caaagcagta ttgtcgaaag ttttaagctt tctcccaata atttaattac attaattaaa 360

tttttaccat tctaatggtt acaaagtaac cag 393

<210> 621
<211> 563
<212> DNA
<213> Homo sapien

<400> 621
ctgacaatga taaaattatc tctatatggg caaacgcgtg ctctttgtcg aagaagaaag 60
cttcagcttc atgttccagg tgagttaatt aggcaatgta tgaatgctaa tatctctttc 120
acatattttg cttaagatct gtcttaggac tctcgtctgg cccatatggt tttccaaggg 180
cagaagggcc tctttttgat gagaggcagt tttcagtaac tcttaaagtg ataacagcaa 240
aggagaggag agagaagagt aagacaaatc gaaacattct tcaattgctt cttggccttt 300
tggctaagct caagctcaaa acaggtcttc aaggagaaaa tacatcacaa agaaaaggat 360
gttttatttc ttaccttgtc ctagaaaaat ttccataaac tctattggct taattctgta 420
aacttgacca atatcagagt gcttcctacc aaggagggta gctgatgagc gtgaccatgg 480
tacatcctag aagaatgtgt gatgaagaag ctttcaccgt gtaaaagagt tgaaaattat 540
tcaaggagac attatggtct tgg 563

<210> 622
<211> 505
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(505)
<223> n = A,T,C or G

<400> 622
tcttaagtgt gtttaataga taaagtaaac tttcctagtc aagggttaga tttttattat 60
ctcttgtgtt ccgactttct acttttcaac tttgaacttc aaaaaaacat tactttgctt 120
atcctttgta ctttgatcag gttgtttaga attgtagatc aaaccattct ttgatcattt 180
tattgtttaa atgnttagtt ccatttataa tttttatagc caactctcgg ttatttctgt 240
cttttgagat tgcaattcag aagctgtatg tcgaagtaat ttatgagttg acttttatac 300
ttaggcttct ttaaatacta atagtcaaga attctagagc atctaataaa aaattaactt 360
tcagatcatt gggaatctgt cctcatttaa atatgtgtaa atgcatttcc acagcaaatt 420
gcttcatgcc ctttgnctat aaggaaatta ttccttgtag ctaatacatt tttcattttg 480
cagnccaaat ctttttgag aaagg 505

<210> 623
<211> 489
<212> DNA
<213> Homo sapien

<400> 623
cctactatgg gtgttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga 60
gctgttcctc tttggactaa cagttaaatt tacaagggga tttagagggt tctgtgggca 120
aatttaaagt tgaactaaga ttctatcttg gacaaccagc tatcaccagg ctcggtaggt 180
ttgtcgcctc tacctataaa tcttcccact attttgctac atagacgggt gtgctctttt 240
agctgttctt aggtagctcg tctggtttcg gggtcttag ctttggctct ccttgcaaag 300
ttatttctag ttaattcatt atgcagaagg tataggggtt agtccttgct atattatgct 360
tggttataat ttttcatctt tcccttgcgg tactatatct attgcgccag gtttcaattt 420
ctatcgctat actttatttg ggtaaatggt ttggctaagg ttgtctggta gtaaggtgga 480

gtgggtttg 489

<210> 624
<211> 233
<212> DNA
<213> Homo sapien

<400> 624
gttggggaac agctaaatag gttgttgttg atttggttaa aaaatagtag ggggatgatg 60
ctaataatta ggctgtgggt ggttgtgttg attcaaatta tgtgtttttt ggagagtcat 120
gtcagtggta gtaatataat tgttgggacg attagtttta gcattggagt aggtttaggt 180
tatgtacgta gtctaggcca tatgtgttgg agattgagac tagtagggct agg 233

<210> 625
<211> 459
<212> DNA
<213> Homo sapien

<400> 625
ttcgagaaca tttttaataa ataatgtgac aaaattactt ttctgattat tggattttca 60
gtatgcaaaa ttatggctaa aaataagggg cttcttacat gaacataatg aaaacattaa 120
tcacatggat tgttccctta gtactgcacg ccttttctat ggaacttttt caaattatct 180
aaatgaacaa gtttggtttt ggtgaacacc agcctttttt tttgtggttc agttttgttt 240
ggctttgtct tccactgggg tcagacctga tacttatcta tctatgaata aatgtacatt 300
tttttcttca aatagcacca attataaaat caatgatatt cataaaatga caaaaaagga 360
tcatagaaat ctactagtca gagggcatca tttgtcaatt gaaagcaagt aatgcctcta 420
ttagagattt taaggaaatc ttgtaggttt cgacattgg 459

<210> 626
<211> 458
<212> DNA
<213> Homo sapien

<400> 626
cctgatgatt gttttaaaca gtagaaaggg ttcagctaag aactacagtc cactctcagc 60
cctgtcatgt actataggac aagtcttcat tcacaacaaa tggatagcaa caccaatctc 120
gtaacactgg gaaaactgca tacaatattt agaaggaaca ctaatacagc agaatctgca 180
cacaacggag tcaaagatct gaggccaaat cctactacac tttacgactt tgagttggtc 240
acttttctga accttagctt ctccatcagt gtaaaactga tgtaaaataa tataaagcta 300
tatgaaagct gatgtgattt acttgtgaaa tagtatgtgc aaaaggactt tgtaaaatgt 360
aaagcactat gctggttatt gtgatatctg agatattttt aaagttgcaa ttcaattcaa 420
caagcattca tttagagtca tgtgcaaggc actgtgct 458

<210> 627
<211> 393
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(393)
<223> n = A,T,C or G

<400> 627

ccatnngaac gcactcagga ggtggtttgt tctggatgca gaaaccagag atctagtttc 60
tatccacaca gacgggaatg aacagctctc tgtgatgcgc tactcaatag atggtacctt 120
cctggctgta ggatctcatg acaactttat ttacctctat gtagtctctg aaaatggaag 180
aaaatatagc agatatggaa ggtgcactgg acattccagc tacatcacac accttgactg 240
gtccccagac aacaagtata taatgtctaa ctcgggagac tatgaaatat tgtactggga 300
cattccaaat ggctgcaaac taatcaggaa tcgatcggat tgtaaggaca tttgattgga 360
ccgacatata cctgtgggct aggacttcca gga 393

<210> 628
<211> 233
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(233)
<223> n = A,T,C or G

<400> 628
ctggatttat aaaatagttg aatgacaaaa gaagnntgtt ttgacagtaa aaaaaagaca 60
ttatggacaa aatatgcaaa atgtgcaaag aaaaaataaa tttgcattag aaaggtgggc 120
atttgatctc tgagccctgt gccatgtaac attgccatgt tctttcactg ttgtttgaat 180
gttgtacccc anccccttgac tctggactta aggcaagcta tgactggctt tgg 233

<210> 629
<211> 450
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(450)
<223> n = A,T,C or G

<400> 629
ccnggacaat ntaggcagga gaaggaaata aagggtattc aattaggaaa agaggaagtc 60
aaattgtccc tgtttgcaga tgacatgatt gtatatctag aaaaccccat tgcctcagcc 120
caaaatctcc ttaagctgat aagcaactcc agcaaagtcg caggatacaa aatcaatgga 180
cacaaatcac aaacattctt atacaccaat aacagacaaa cagaggccaa atcacgagtn 240
gaactctatt ccaattgctt tcaagaaaat taaaatacct agggatccaa cttacaaggg 300
acatgaagga cctcttcaag gagaaactac aaaccactgc tcaatgaaat aaaagaggat 360
acaaagaaat ggaagaacat tccatgctca ttggtagctt gatggggatg gcattgaatc 420
tataaattac cttgggcagt atggacctca 450

<210> 630
<211> 486
<212> DNA
<213> Homo sapien

<400> 630
cctactatgg gtgttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga 60
gctgttcctc tttggactaa cagttaaatt tacaagggga tttagagggt tctgtgggca 120
aatttaaagt tgaactaaga ttctatcttg gacaaccagc tatcaccagg ctcggtaggt 180
ttgtcgcctc tacctataaa tcttcccact attttgctac atagacgggt gtgctctttt 240

agctgttctt aggtagctcg tctggtttcg ggggtcttag ctttggctct ccttgcaaag 300
ttatttctag ttaattcatt atgcagaagg tataggggtt agtccttgct atattatgct 360
tggttataat ttttcatctt tcccttgcgg tactatatct attgcgccag gtttcaattt 420
ctatcgccta tactttattt gggtaaatgg tttggctaag gttgtctggt agtaaggtgg 480
agtggg 486

<210> 631
<211> 211
<212> DNA
<213> Homo sapien

<400> 631
tttacataaa tattatacta gcatttacca tctcacttct aggaatacta gtatatcgct 60
cacacctcat atcctcccta ctatgcctag aaggaataat actatcactg ttcattatag 120
ctactctcat aaccctcaac acccactccc tcttagccaa tattgtgcct attgccatac 180
tagtctttgc cgcctgcgat gcagcggtag g 211

<210> 632
<211> 293
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(293)
<223> n = A,T,C or G

<400> 632
cagcgcaagt aggtctacaa gacgctactt cccctatcat agaagagctt atcacctttc 60
atgatcacgc cctcatagtc atttttcctt atctgcttcc tagtcctgta tgcccttttc 120
ctaacactca caacaaaact aactaatact aacatctcag acgctcagga aatagaaacc 180
gtctgaacta ngctgcccgc catcatccta gtcctcatcg ccctcccatc cctacgcatc 240
ctttacataa cagacgaggt cnacgatccc tcccttacca tcaaatcaat tgg 293

<210> 633
<211> 263
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(263)
<223> n = A,T,C or G

<400> 633
nggtctgcag tgtccctttt tatatcatgc tagtgttgag acatacttga ctaacttggg 60
aacagttcga tatattgaca accgtcaact taagaaaatc aacagctttt ggccccagcg 120
tccaagtgaa cttttcatgg agtgcagaat ctcaaatgga caaaatactt tgtcttttta 180
aatactgaaa attnaattat tagtactatg actgaaagat tcttcatggc taaaaagctc 240
tgcatcaaac tcaattcagg agg 263

<210> 634
<211> 491
<212> DNA

<213> Homo sapien

<400> 634
cctactatgg gtgttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga 60
gctgttcctc tttggactaa cagttaaatt tgcaagggga tttagagggt tctgtgggca 120
aatttaaagt tgaactaaga ttctatcttg gacaaccagc tatcaccagg ctcggtaggt 180
ttgtcgcctc tacctataaa tcttcccact attttgctac atagacgggt gtgctctttt 240
agctgttctt aggtagctcg tctggtttcg gggtcttag ctttggctct ccttgcaaag 300
ttatttctag ttaattcatt atgcagaagg tataggggtt agtccttgct atattatgct 360
tggttataat ttttcatctt tcccttgcgg tactatatct attgcgccag gtttcaattt 420
ctatcgccta tactttattt gggtaaatgg tttggctaag gttgtctggt agtaaggtgg 480
agtgggtttg g 491

<210> 635
<211> 270
<212> DNA
<213> Homo sapien

<400> 635
ccaattgatt tgatggtaag ggagggatcg ttgacctcgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg 180
gcatacagga ctaggaagca gataaggaaa atgactatga gggcgtgatc atgaaaggtg 240
ataagctctt ctatgatagg ggaagtagcg 270

<210> 636
<211> 383
<212> DNA
<213> Homo sapien

<400> 636
cctactatgg gtgttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga 60
gctgttcctc tttggactaa cagttaaatt tacaagggga tttagagggt tctgtgggca 120
aatttaaagt tgaactaaga ttctatcttg gacaaccagc tatcaccagg ctcggtaggt 180
ttgtcgcctc tacctataaa tcttcccact attttgctac atagacgggt gtgctctttt 240
agctgttctt aggtagctcg tctggtttcg gggtcttag ctttggctct ccttgcaaag 300
ttatttctag ttaattcatt atgcagaagg tataggggtt agtccttgct atattatgct 360
tggttataat ttttcatctt tcc 383

<210> 637
<211> 537
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(537)
<223> n = A,T,C or G

<400> 637
ttttaatcct ggggtatata ggcagnactt taaattgcaa agtcttccgg gcctattttc 60
ctctacattt ttgtaattaa ctctgggggc ttacttgttt tggcagtact gaaatcaaag 120
gagctggttc ttcttttctc ccaattattt tcatatgaaa gcacctacaa ttagcctgtt 180
agtcctattc agatacatca aatatcagtg aatgctttac tattcgcaca tttaagcatc 240

tttgttttac ataaaattag agtatgaaaa ccagtgttca attttttatc ttgttgagct 300
tgtaaaatgc cagcaattta aaactaggac ttttcccccc ataagccaag gaggtagaat 360
tactaataca agggttaaag aaggtagatt ttgttttcaa tatttgggta atattagaaa 420
gattcttccc acagggaaga actagcaagt gtcccaattt tttccaaacg ttggggaggg 480
gaaaattcac tgtatcatga aaccctaagg gtttgngtgc acttcctgct ttttagg 537

<210> 638
<211> 445
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(445)
<223> n = A,T,C or G

<400> 638
ccagcagaac acagnagtga tttggtcccg tttgttcccc agtggggtat ctatccttgt 60
gcagggcaca agcctacatg gtggctctgg tcatatcatt agaaaataga cagaaatggg 120
ctgcacacca gaatgaatga attgaattga aagggaggag tgatggtgga aaaaaaaaca 180
agtcaattca tttagactgg tagaaccaga accactgtgt agtacatcca aacggttaaa 240
attccctgga agatgttaca taatcctatc atggtgttta tttatggaaa tctattttaa 300
aaattttatg taatactgca cagtctgttt gcatgatgcc ttgtacgtag tagcaactca 360
gtaaatactt tttgaatgaa ctagtatagt attttaatta gctagtcttc gtgtactggt 420
acaaaagaac agtgtcatct tacag 445

<210> 639
<211> 584
<212> DNA
<213> Homo sapien

<400> 639
gcttgagtat tctatagtgt cacctaaata gcttggcgta atcatggtca tagctgtttc 60
ctgtgtgaaa ttgttatccg ctcacaattc cacacaacat acgagccgga agcataaagt 120
gtaaagcctg gggtgcctaa tgagtgagct aactcacatt aattgcgttg cgctcactgc 180
ccgctttcca gtcgggaaac ctgtcgtgcc agctgcatta atgaatcggc caacgcgcgg 240
ggagaggcgg tttgcgtatt gggcgctctt ccgcttcctc gctcactgac tcgctgcgct 300
cggtcgttcg gctgcggcga gcggtatcag ctcactcaaa ggcggtaata cggttatcca 360
cagaatcagg ggataacgca ggaaagaaca tgtgagcaaa aggccagcaa aaggccagga 420
accgtaaaaa ggccgcgttg ctggcgtttt tccataggct ccgcccccct gacgagcatc 480
acaaaaatcg acgctcaagt caagaggtgg cgaaacccga caggactata aagataccag 540
gcgtttcccc ctggaagctc cctcgtgcgc tctcctgttc cgac 584

<210> 640
<211> 404
<212> DNA
<213> Homo sapien

<400> 640
ccataggaac gcactcaggc aggtggtttg ttctggatgc agaaaccaga gatctagttt 60
ctatccacac agacgggaat gaacagctct ctgtgatgcg ctactcaata gatggtacct 120
tcctggctgt aggatctcat gacaacttta tttacctcta tgtagtctct gaaaatggaa 180
gaaaatatag gagatatgga aggtgcactg gacattccag ctacatcaca caccttgact 240
ggtccccaga caacaagtat ataatgtcta actcgggaga ctatgaaata ttgtactggg 300

acattccaaa tggctgcaaa ctaatcagga atcgatcgga ttgtaaggac attgattgga 360
cgacatatac ctgtgtgcta ggatttcaag tatttggtgt ctgg 404

<210> 641
<211> 138
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(138)
<223> n = A,T,C or G

<400> 641
ctgtgacagg aacattacct gaagtgcagg gtggttacct gcacaaagtc ccatttccaa 60
aaatttctgt gtaattcacc agaaattttg gatggaataa ttagaaaaaa aaaaagaggt 120
taaaacntgt aactcaaa 138

<210> 642
<211> 381
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(381)
<223> n = A,T,C or G

<400> 642
ctgtaggtgg aatttttacc cagaaaagat aggccctaga agcctcattt cttttctcca 60
tggaaaagga cagccctctg ctgcagcgtt caacttgtgt gtttactgac agagtgaact 120
acagaaatag cttttcttcc taaaggggat tgttctacat tttgaagtta ttttttaata 180
aaattgaatt atgttgtgta ttgtgcttcc taataggaaa tgcattattg gactgttttt 240
gtaacatcct gtttattgca aatagctagt atcgttcaaa aactgtataa aatacttttg 300
tacatattag caatgtctaa tttgtataca cttcagttaa atttccctaa aacttgaaag 360
gggaccttgt anaaattaaa a 381

<210> 643
<211> 403
<212> DNA
<213> Homo sapien

<400> 643
ccttcctaaa aaatagtggt gagctggagg ctacttccgc cttcttagcg tctggtcaga 60
gagctgatgg atatcccatt tggtcccgac aagatgacat agatttgcaa aaagatgatg 120
aggataccag agaggcattg gtcaaaaaat ttggtgctca gaatgtagct cggaggattg 180
aatttcgaaa gaaataattg gcaagataat gagaaaagaa aaaagtcatg gtaggtgagg 240
tggttaaaaa aaattgtgac caatgaactt tagagagttc ttgcattgga actggcactt 300
attttctgac catcgctgct gttgctctgt gagtcctaga tttttgtagc caagcagagt 360
tgtagagggg gataaaaaga aaagaaattg gatgtattta cag 403

<210> 644
<211> 688
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(688)
<223> n = A,T,C or G

<400> 644
cctatttatt tgttttggcc ctggatcttt cctaatcaca attatatttc tttatttttg 60
cctttgagca gtttcattta tctttgtggg cagggaagat taaatatgaa attcagtcca 120
gtcattttgc tactggttag ctttagtttg aggcaagtaa aaatttttga ttaaaattag 180
tttcttaaaa ttatgccctt gctttaccaa ataatcaaat tggctaaaaa ataagggtat 240
gtaactttgc attttgaaga acaaaccaat aatttttcat gagccctact cgatcttctt 300
taaagaagac cttcctaaga gacaattagg gatgagtttg attaatggga aatagctcta 360
ggttagatta ttttaaattc catacaccaa gtgatttaac cacagtggca gtggcagctt 420
ctgaaccgtc aagtatgaac atcacttaaa aattaaaaga tgcttaataa taaactctta 480
attttcatta agccaatctg taattcagaa gaaaagcata tgtctgccat gggactattg 540
cagtgcgtct ccatcagtgt taacacagga gagatatgtt attttatgtg tatgtcttag 600
tttgggatat gtggtagtaa gaacatgtca agagtgcttt tcttcaaacc tgncagctca 660
actgangaaa gacaggtact tccattgc 688

<210> 645
<211> 484
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(484)
<223> n = A,T,C or G

<400> 645
ccaaatgtgt ctccagccca cacttccagg tggcagagcg agctctctat tactggaata 60
atgaatacat catgagttta atcagtgaca acgcagcgaa gattctgccc atcatgtttc 120
cttccttgta ccgcaactca aagacccatt ggaacaagac aatacatggc ttgatataca 180
acgccctgaa gctcttcatg gagatgaacc aaaagctatt tgatgactgt acacaacagt 240
tcaaagcaga gaaactaaaa gagaagctaa aaatgaaaga acgggaagaa gcatgggtta 300
aaatagaaaa tctagccaaa gccaatcccc aggtactaaa aaagagaata acatgaaaac 360
gcccagggtt acttgaatgt ttttataaga taggaatata tgtcttcacc atgggggggg 420
gtctcggatt tcactaacgt tgtatatgaa aatgggtgcn ataaaaagta cttttaaact 480
ttgt 484

<210> 646
<211> 447
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(447)
<223> n = A,T,C or G

<400> 646
gggtcgcgtt gaacaacttg gttcaagatg gtgggggcat ttttagagcg gcaataattg 60

aaaaaaaagg cgaactctgc cttggagagg tagatgataa gaaataaaaa ggtgtttata 120
actattttgt attataaagt gggccttaga gataggaaga agaatgatgg attccttttg 180
gatcaatcag aaaggaaaca cgaaagaaaa gtcaggaagg tagagagaga aaaagggagg 240
gaaggagaaa gaatgggaat aaaataagga ggtaagagat actatttttg ctgagcaacc 300
agtgtgtttc aggatgatac aaagaaaaat atagaataga aataagtgca ggcttggaat 360
cagctacaaa tcctaaagat ggggtgtgtg tggatgtgtg tgtgtgtgtg tgnacaccat 420
tgtgtgtttg taaaatgtgt atgtccc 447

<210> 647
<211> 388
<212> DNA
<213> Homo sapien

<400> 647
gaaggtgata taaaatgact gtcatcattt ggagtgtgca gtacagttac ttcatgttcc 60
tcaggtttag aacaatttcc cctgcaagtt ctcacacaga taggcagaaa tcataactaa 120
ttttggttaa tcactatggc agccgttgaa gaatttaaga gaacctgcca gtaagatttg 180
gaataagatt ctatattatt gcatccacag aaaagaatgt actgatatac tataaactct 240
aggagaaaac ttaattgaaa tagtgttatt aagtgttgaa agtaccataa aaatataagg 300
gaaaataagc tttcctagaa tttttcagtg ttctagtttt taaacagtga tgttttttat 360
taacctattt catccattca aagacagg 388

<210> 648
<211> 632
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(632)
<223> n = A,T,C or G

<400> 648
cctggctggg cntttgacct gcgnttttaa atnactcaca gagggtggga caggaggaag 60
agtgaaggaa aaggtcaaac ctgttttaag ggcaacctgc ctttgttctg aattggtctt 120
aagaacatta ccagctccag gtttaaattg ttcagtttca tgcagttcca atagctgatc 180
attgttgaga tgaggacaaa atcctttgtc ctcactagtt tgctttacat ttttgaaaag 240
tattattttt gtccaagtgc ttatcaacta aaccttgtgt taggtaagaa tggaatttat 300
taagtgaatc agtgtgaccc ttcttgtcat aagattatct taaagctgaa gccaaaatat 360
gcttcaaaag aagaggactt tattgttcat tgtagttcat acattcaaag catctgaact 420
gtagtttcta tagcaagcca attacatcca taagtggaga aggaaataga tagatgtcaa 480
agnatgattg gtggagggag caaggttgaa gataatctgg ggttgaaatt ttctagttnt 540
cattccgtac atttttagtt agacatcaga tttgaaatat taatgttacc tcctcaatgg 600
ggtggtatca gacctgcccg ggcggncgnn tc 632

<210> 649
<211> 300
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(300)
<223> n = A,T,C or G

<400> 649
nggtgaagat agaanaaata taagcgaaat tggataaaat agcactgaaa aaatgaggaa 60
attattggta accaatttat tttaaaagcc catcaattta atttctggtg gtgcagaagt 120
tagaaggtaa agcttgagaa gatgagggtg tttacgtaga ccagaaccaa tttagaagaa 180
tacttgaagc tagaagggga agttggttaa aaatcacatc aaaaagctac taaaggact 240
ggtgtaattt aaaaaaaact aaggcagaag gctttggaag agttagaaga atttggaagg 300

<210> 650
<211> 498
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(498)
<223> n = A,T,C or G

<400> 650
ngtnctgnta aacagaaggg tacaangccc ttctggcttt aagcagtcat aggaatgtga 60
cagacattcc tcttagggag cgcctcctcc tagggtttcc tcatctgtct cacactgagt 120
ggatgtaatg ctattttaat cctgctgtgg cccccaatac tagtacttgt ccataccttc 180
ttgcattttt agcgtctgct ctgtggggtt gttaggccct ggcactccca ggaactagtg 240
ctaaagctgc atctntctct cccctctagg gatcgataaa gtttcactgc agaaagtctc 300
cactgcggta tgctgacatc tgccctgaac cttcacccta cagcattaca ggctttaatc 360
agattctgct ggaaagacac aggctgatcc acgtgacctc ttctgccttc actgggctgg 420
ggtgatcctt ggtgcctttg tttccacaag gccttttcct gccccctgcc ttgccaaaga 480
catttaatca gcacacag 498

<210> 651
<211> 654
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(654)
<223> n = A,T,C or G

<400> 651
ctgagggtcc ccaggtttct aaagctctca ggacgagaaa gtaggtccca agataaggag 60
cctaaagggc ttttttcttt ctgtgtattc cttcttggcc tccaacatgg gtacagtcac 120
aagagcatgt aacagagaag aaggactana cctaccattt tctggataaa gaattggaaa 180
gaggatccac aggtaaccaa aaagtaccag ggaaatggca gagaaggaaa acctcaggag 240
accaacctca taagtggtat ttattagngc ctgggctcaa atccaaattg tacatgaata 300
tgtctggtcc tagatagggt accgaagact ttgaaagtga attttggtat atcattgccc 360
agattccaga ctggntattg tgtgacacaa catacaggat atatctgaat agtgctcaga 420
agagtttgaa aatgcaaatg atattaaaat aaagatgaaa aagagaaagc tggtcagaac 480
ttgtggacat aacccttctg gatctgtngc ctgattaaaa aatagttgat attctcgaat 540
gaattaaaac aagatttaga gactgagcat ggtagctnat tcttgtaatc caacnctttg 600
ggagggcaag gcaanagaat tgcttgcggc caggagtttt gagaccagct tggg 654

<210> 652
<211> 293

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(293)
<223> n = A,T,C or G

<400> 652
ngtctgttgc actgaggtga ctaaggatac attttgagga agtagctcca agaacatttc 60
cattttcact gtgccttcac atacatctaa tggaaatgaa cagcacccctt catccatcca 120
cggaagcgat taagaaaagg gtgggatgga aaaattaacc caacaatatt agatcaatac 180
gtagtattta agngtccata atgtgccagg ctgaagatgc acgggaaaac cacactagcc 240
ggtctgtcaa gggcttgaga ataccataaa caagaaaaca gacgaaccaa ttt 293

<210> 653
<211> 294
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(294)
<223> n = A,T,C or G

<400> 653
ngtccaccac tgcagcccta catacagttg aaaaaaaatt ccattctgtt aacatttgtt 60
ttataagttt tcacgcaata cacaaaaaac ccctctgcac ttcttgtaaa gaacaaaaaa 120
gatacacaac agttaagcgt aaagatcaca ggcaatagca ttcaaacatg gatgtgggta 180
gagaaaggag tacctggcat gagtacctgc ttagtttgac tgaatccttg atttttaatt 240
tggcttttca tgggccgctc acaacaccaa cgctgtgtga ggtatggtag tcag 294

<210> 654
<211> 250
<212> DNA
<213> Homo sapien

<400> 654
ctgtccttga acaagtatca atgtgtttat gaaaggaaga tctaaatcag acaggagttg 60
gtctacatag tagtaatcca ttgttggaat ggaacccttg ctatagtagt gacaaagtga 120
aaggaaattt aggaggcata ggccatttca ggcagcataa gtaatctcct gtcctttggc 180
agaagctcct ttagattggg atagattcca aataaagaat ctagaaatag gagaagattt 240
aattatgagg 250

<210> 655
<211> 494
<212> DNA
<213> Homo sapien

<400> 655
ccattataat tttataacac cattaccctt taaattctac cgattataag cagcgtaaaa 60
gtaactatat aaagcaaaca tcgcaaagga actctgcagg agctcttaat tcctttatgt 120
agctatcata aaattcactt tcctgaagac atttactctc attcacttcc aaactccaaa 180
cctttttctg gtagcaccac ttttgttttt aatagaaaga tgagttcata tctgtacatc 240

tctccaaagc tctaaggaat gagaaaagga tcctagtata ttgaaattac tgatgtttaa 300
tacctctgcc ttttcactaa aagccattta atatttttaa agtcaaaact tgacatacag 360
gtatttataa ggaatctcca tgactctgaa ggaatgaaat tgatgtaggt agctttggct 420
atgtaaagac atagtagagg acaattactt aaagaagagt tttcttttga ggatttgtag 480
atttgactaa gcag 494

<210> 656
<211> 477
<212> DNA
<213> Homo sapien

<400> 656
cgcgttactg tacatattgc tagcaggaga caactggaaa tactaaacaa atactggaat 60
tcacattaca gacagacgaa accaacatgg atgccacaca taacttcctt tgtagtttca 120
cagagggcct atttgtggtt gctcaggtgg ggtcatacat tgcttgcaga aatggcctga 180
tcatagctct atgaaacaat gaattcggaa tgaaatctta ccatgacacc tctctgtagg 240
aaagaaatgt tgcttcacgt gtgctaagtt gagataataa tatttcacat atttatatac 300
agagaatcac tctcaaattt aacccaagat aagcaatagg atttgggggt gacttgtaca 360
catttctaac aacacttttc ttttttctag aggtcactct caaacactga tatatcacta 420
tagtttgagt gtagggattc agtaatcaaa ggttgttatt gcaaaagagc caggcag 477

<210> 657
<211> 576
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(576)
<223> n = A,T,C or G

<400> 657
cctctacctg tanatcacta tttttctaaa gacaatttgg tgttttgaag ataaatgtca 60
ttagtctatg ataatagcat cataggacaa ttagccattt tagacttgac catattttct 120
ctttttagca tatagccatc ttgatattta ggtgggagac tactccaatg gagcaacagt 180
ttcattttac atgattggat ttagaaattt acaaatttta aactcataag aattctaaat 240
aatttgaaaa tggaaacatt tgacccacag tctagcagca taaatacatt tataaaatac 300
ttcattgttg atcttaggtc attgatttaa aacagaattt ggtgactatg ggcaggtgga 360
gggggccagt gaggaaggta taaaagagaa atctttatga attgtgttca gattgatttt 420
gtataaacat aatatattca tggttgtatc tcttatttat aatacccaac taacatgaag 480
gtggtccaag ggaaggatca atattttaaa taacatattt gcttaaaata tcatacagtg 540
gctgcttcat aaaaaatctt ataaactttt attacc 576

<210> 658
<211> 344
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(344)
<223> n = A,T,C or G

<400> 658

cctgaaaaga aagntgctct tatggactct tgcatgttaa gactatgtct tcacatcatg 60
gtgcaaatca catgtaccca atgactccgg ctttgacaca acaccttacc atcatcatgc 120
catgatggct tccacaaagc attaaacctg gtaaccagag attactggtg gctccagcgt 180
tgttagatgt tcatgaaatg tgaccacctc tcaatcacct ttgagggcta aagagtagca 240
catcaaaagg actccaaaat cccataccca actcttaaga gatttgtcct ggtacttcag 300
aaagaatttt catgagtgtt cttaattggc tggaaaagca ccag 344

<210> 659
<211> 230
<212> DNA
<213> Homo sapien

<400> 659
ctgctttccc tgctaaacag ttccagagca aaagcagcaa aaagaaaata tgggagggat 60
atgggcaacg tatactcgaa cgtacgcaga gaagagagta cggttagctc taatatttct 120
cattgaactt ggtggtatgt gccttccctg catataaggc catagtgctt ttttgggagc 180
gctagaatat ccatccactt gacagtgacc acaaaatagg ctgtttccag 230

<210> 660
<211> 80
<212> DNA
<213> Homo sapien

<400> 660
ctggtccttg ttaaactcga tcaccacttt ggagagatcg actggaggct cctgggtgtt 60
ctgaggggcc tgggggacag 80

<210> 661
<211> 535
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(535)
<223> n = A,T,C or G

<400> 661
ctgaaccata tctgattaac tctttggtct ctgttattgg aacaaaaccg acgctatgcc 60
tgcagccgcc agactgcaac caaaaacaca gtttggggtc agaagacatt aaaaatcaca 120
ataaaatagg atgaatgttc taagtcacgc aactgaatca aggcaccttt ttttttcaaa 180
agcaaaaagt tgtttaacaa tattccagaa tagtagatac ttcaaaaacc agattacagt 240
atatatcatt ttgctgcaca ttttagtcta ttttctgtat acatagtcac acattcttta 300
ccctctccca acttatacat gctttatccc cccagtcatg tgctatgtag gtataaaaaa 360
ataaagttgt atctaaacaa gtgatttaaa aaaaaaaact aacgaatgcc ncnatnataa 420
cnctgaactt gtttccctnt tgaaggacat tggaaatgtt accgaggttn ntttacctng 480
gccgcaaccn cnctangggc naattccagc ncactggggg ccgttactag gggat 535

<210> 662
<211> 257
<212> DNA
<213> Homo sapien

<400> 662

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cctgactaaa gcacatatca cactccctac acttccatgt tttctctccc atgtggaccc      60
tctgatgcat atcaagattc aagcgcctgt tgtagccctt cccacagtcc tcacatttgt     120
atggcttttc tacactgtga actttttctt gcactttaga gaatgaattc tgtacaatgt     180
tcttcccatg ctgctcacat ttgagaggtg tttctctgct gtggcgtctc tgatgggtca     240
gacgagttga ggaccag                                                     257
```

```
<210> 663
<211> 516
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(516)
<223> n = A,T,C or G

<400> 663
ccaattatag gtattttatt ttttaaagat tagagngttc ttgaagctct ttctatttct      60
ttgtcaatga actaaacatt ggcaaatatg tagggtttcc cacataagaa cattattaac     120
atcaaaatag aaagctggtg gtagaaataa tgattgggaa cacagagtct ctactcagcg     180
ttctacttct gccataccat aactttgtga tctcacgaaa tatctctcca tgttctcatc     240
cctatgtata gttctgtcat ttttcaataa gagctttttg cttaattatg aagtactagt     300
tactataacc attattttga gcttcatgta aatcaagaac acatggactc cacttgcaaa     360
acattgaaaa tgtagttagg gattgggggc aaaaagcaac attttaaaat gtgtaaagac     420
aatgagtaag caacaaagtg tccaattttt taggcgaaag ttgcatatgt caggaaaagg     480
caggattaag taatagagaa tttgaatgat aactgg                                516

<210> 664
<211> 212
<212> DNA
<213> Homo sapien

<400> 664
gtccgaggag gttagttgtg gcaataaaaa tgattaagga tactagtata agagatcagg      60
ttcgtccttt agtgttgtgt atggctatca tttgttttga ggttagtttg attagtcatt     120
gttgggtggt aattagtcgg ttgttgatga gatatttgga ggtggggatc aatagagggg     180
gaaatagaat gatcagtact gcggcgggta gg                                    212

<210> 665
<211> 408
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(408)
<223> n = A,T,C or G

<400> 665
atccaggggt ncccggtngc tgcngggaaa cctccagcct tgttcttcaa accactcagc      60
tcatgtgttt tgcgctgact agtactgaat aatacaacca ctcttattta atgttagtat     120
tatttatttg acaactcagt gtctaacagc ttgatatgca ggtccttgca tcctacattt     180
ctttaggaag ttacccattt gtaactttaa aaacaggaaa aatatcagtt ggcaaatgca     240
atcttttttt tttttaagct aaagggggggn naacngnaan naaaatnttt ntgangtngg     300
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gtctataagc acccttgang ggatntgtta aaagngncat naangggggga ttctcntttn 360
gcaaaaaaat ntaannatca atttatanan ctttattttt nactttnt 408

<210> 666
<211> 635
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(635)
<223> n = A,T,C or G

<400> 666
ctgaagnaca agggtcaggc aaaaataaga tcacaatcac caatgaccag aatcgcctga 60
cacctgaaga aatcgaaagg atggttaatg atgctgagaa gtttgctgag gaagacaaaa 120
agctcaagga gcgcattgat actagaaatg agttggaaag ctatgcctat tctctaaaga 180
atcagattgg agataaagaa aagctgggag gtaaaccttc ctctgaagat aaggagacca 240
tggaaaaagc tgtagaagaa aagattgaat ggctggaaag ccaccaagat gctgacattg 300
aagacttcaa agctaagaag aaggaactgg aagaaattgt tcaaccaatt atcagcaaac 360
tctatggaag tgcaggccct cccccaactg gtgaagagga tacagcagaa aaagatgagt 420
tgtagacact gatctgctag tgctgtaata ttgtaaatac tggactcagg aacttttgtt 480
aggaaaaaat tgaaagaact tanctctcga atgtcattgg aatcttcacc tcacagtggn 540
gttgaaactg ctatagccta agcnggctgt ttactgnttt ncattagcag gtgctcacca 600
tgtctttggg gtgggngggg ggagaaagaa agaan 635

<210> 667
<211> 388
<212> DNA
<213> Homo sapien

<400> 667
gaaggtgata taaaatgact gtcatcattt ggagtgtgca gtacagttac ttcatgttcc 60
tcaggtttag aacaatttcc cctgtaagtt ctcacacaga taggcagaaa tcataactaa 120
ttttggttaa tcactatggc agccgttgaa gaatttaaga gaacctgcca gtaagatttg 180
gaataagatt ctatattatt gcatccacag aaaagaatgt actgatatac tataaactct 240
aggagaaaac ttaattgaaa tagtgttatt aagtgttgaa agtaccataa aaatataagg 300
gaaaataagc tttcctagaa tttttcagtg ttctagtttt taaacagtga tgttttttat 360
taacctattt catccattca aagacagg 388

<210> 668
<211> 498
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(498)
<223> n = A,T,C or G

<400> 668
tgatcttaac aaaattcgta gcagtggaac cttgaaatgc atgtggctag atttatgcta 60
aaatgattct cagttagcat tttagtaaca cttcaaaggt ttttttttgt ttgttttcta 120
gacttaataa aagcttagga ttaattagaa gaagcaatct agttaaattt cccatttgta 180

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ttttattttc ttgaatactt ttttcatagt tattcgttta aaaagattta aaaatcattg      240
cactttggtc agaaaaataa taaatatatc ttatgaatgt ttgattccct tccttgctat      300
ttttattcag tagatttttg tttggcatca tgttgaagca ccgaaagata aatgattttt      360
aaaaggctat agagtccaaa ggaatgttct tttacaccaa ttcttccttt aaaaatntct      420
gaggaatttg ttttcgcctt actttttttt cttctgtcac aatgctaagn ggtatccgag      480
gttnttaata tgagattt                                                    498

      <210> 669
      <211> 622
      <212> DNA
      <213> Homo sapien

      <400> 669
ccttagccaa agaatgcagt ggagccttcc cccttcaact gcattgtgaa tgaataccaa       60
ttaacagcat aaaaattaat agtcccatat cagatctgga aggggtttct ggggctgtct      120
gatgtcccta tcctgttgta gtgaacacaa tagcagaaaa ttctttctgg gtccatctgc      180
tataaagtct tggtaaaaca gcattactat gaagaggatg aactcaccta ccttcagatg      240
gaggaaaagt gaaaaggact taggctttag tcctccatga cttttcttaa gcactaccta      300
cctgtaataa gctgagtgca aaaggatgcc gaagaaaatc tgcacccaga agctgttaga      360
aagcactgca gagaacaggg tatgaagaaa ataaagagtt cttaataaac ccttaagatt      420
ctttgttcaa ggtaaccttg ccaaaagggc agagtaggtg gcaaagagtt gcttttaatc      480
tagctctaca ctgcatttga aaataaaatt tgcccatttt gaatatattg tttataatta      540
aatgtgcttt ttacactgca ggtcaatata aaaactggtt agtaaatttc cagcgagcat      600
ttatgttcat ttgctcacag ca                                               622

      <210> 670
      <211> 477
      <212> DNA
      <213> Homo sapien

      <400> 670
ttgggccctc tagatgcatg ctcgagcggc cgccagtgtg atggatatct gcagaattcg       60
cccttgccgc ccgggcaggt gatggatgag gagcaaaaac tttatacgga tgatgaagat      120
gatatctaca aggctaataa cattgcctat gaagatgtgg tcgggggaga agactggaac      180
ccagtagagg agaaaataga gagtcaaacc caggaagagg tgagagacag caaagagaat      240
atagaaaaaa atgaacaaat caacgatgag atgaaacgct cagggcagct tggcatccag      300
gaagaagatc ttcggaaaga gagtaaagac caactctcag atgatgtctc caaagtaatt      360
gcctatttga aaaggttagt aaatgctgca ggaagtggga ggttacagaa tgggcaaaat      420
ggggaaaggg ccaccaggct tttgagaaa cctcttgatt ctcagtctat ttatcag          477

      <210> 671
      <211> 127
      <212> DNA
      <213> Homo sapien

      <400> 671
gtgtgtgtgt ctacttgggc gtgtttaacg tgtgcgtttg tgtctgcgtg tgcatgtgtc       60
tgtgtgtgcg cgtgtatttc agtttgggtt gccggatccc atatgattgc gtgcctgtgt      120
acctgag                                                                127

      <210> 672
      <211> 400
      <212> DNA
      <213> Homo sapien
```

<400> 672
gggtctgcac agctatgtta acagcatcct tataccagga gtaggaggaa agacacgact 60
ggaaaagcaa ttcaagctgg tcacacagtg taatgcaaaa tatgtggaat gtttcagtgc 120
tcagaaagag tgtaacaaag aaaagaacag aaactcttca gttgtgccat ctgagcgtgc 180
tcgagtgggt cttgcaccat tgcctggaat gaaaggaaca gattacatta atgcttctta 240
tatcatgggc tattatagga gcaatgaatt tattataact cagcatcctc tgccacatac 300
tacgaaagat ttctggcgaa tgatttggga tcataacgca cagatcattg tcatgctgcc 360
agacaaccag agcttggcag aagatgagtt tgtgtactgg 400

<210> 673
<211> 600
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(600)
<223> n = A,T,C or G

<400> 673
ctggcgttgc tcattagtga atgtatgaca gcaggatgtg aggggatgcc caggagtcag 60
tgttagcatt gtcatctgag atcactgcta ttaatatcat ccattaattt attagtgagc 120
ttcactatat gcagactggg agataaggag aaaatctgtc acattctctc tagctaatca 180
gatcagctac caattaatga gattctgaat gaaatatcaa tatgtgtttt tctaatttgg 240
acctaggaca gagctgttgc ttgtcataga gaaaaacaat aatgcttaaa catagcacat 300
tataattaaa gcaggtttct cacatacttt tcattttatc ctttggataa ttttgtgagg 360
aacgcaggac accaacttcc ctttcataga tacaatcccc atgctattga tgaaagtgtt 420
tttgaatgaa gccatacaac aaataactga tcaaagtggc attacaccaa aatttcttag 480
taggactcct gcatagaatg tttagataga cgtgaaaagt ttgttcanga ggaccagcaa 540
gagagaaact gggttctttg ggagggtttc ggtgctacat ttataccctn catcagagtn 600

<210> 674
<211> 140
<212> DNA
<213> Homo sapien

<400> 674
ggtggttggt gtaaatgagt gaggcaggag tccgaggagg ttagttgtgg caataaaaat 60
gattaaggat actagtataa gagatcaggt tcgtccttta gtgttgtgta tggctatcat 120
ttgttttgag gttagtttga 140

<210> 675
<211> 245
<212> DNA
<213> Homo sapien

<400> 675
gttgggtggt tggtgtaaat gagtgaggca ggagtccgag gaggttagtt gtggcaataa 60
aaatgattaa ggatactagt ataagagatc aggttcgtcc tttagtgttg tgtatggcta 120
tcatttgttt tgaggttagt ttgattagtc attgttgggt ggtaattagt cggttgttga 180
tgagatattt ggaggtgggg atcaatagag gggaaatag aatgatcagt actgcggcgg 240
gtagg 245

<210> 676
<211> 621
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(621)
<223> n = A,T,C or G

<400> 676
ctgtccccag ggnaaatagt ngaattcaac taagatctgt taataagatg tcagaataac 60
taataatttt attaggaaaa aatcatgttt taaatttcaa aatgacactt atttgtcaag 120
taatatgatc ttggaaaatt ttaaagaaaa ataatcctac ttataaacta ctttttttata 180
attgttttca gaaaaaaagt ttacagtctt aaggaaaata ttcaggtcta tcatatggtt 240
tgacagattt tttaaaagtt atttttggta aggtcttctt ttagaaaaaa attaatctca 300
agggtttttt gtaccactat aatctctaat acttactcag aattactgtg tatttactta 360
atttcttatt atgtgcctta ttatgtgctt aagatacaat aggttagagt ttaatctaaa 420
tatcttgaaa gctatattgt gggcttggta agcattttgt tttttctttc tctgttttgg 480
taaggattta aaattttttt cattgcaatt ttaagtggtt ttcaataagt aatagttttt 540
atcaaatttt tggtgcttgg tgcagagacg gcgtggggaa gggtgaatgg ttttgggaat 600
aattcagtgc acacctgggg g 621

<210> 677
<211> 210
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(210)
<223> n = A,T,C or G

<400> 677
tttacataan atattatcag catttaccat ctcacttcta ggaatactag tatatcgctc 60
acacctcata tcctccctac tatgcctaga aggaataata ctatcactgt tcattatagc 120
tactctcata accctcaaca cccactccct cttagccaat attgtgccta ttgccatact 180
agtctttgcc gcctgcgaag cagcggtagg 210

<210> 678
<211> 383
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(383)
<223> n = A,T,C or G

<400> 678
gtaggagtca ggtagttagg gttaacgagg gtggtaagga tgggggggaat tagggaagtc 60
agggttaggg tggttatagt agtgtncatg gttattagga aaatgagtag atatttgann 120
aactgattaa tgtttgggnn tgagtttnta tatcacagcc anaattntat gatgnaccat 180
gtancgaaca atgctacagg gatgaatatt atggagaagt antctanttt gaagcttagg 240

gagagctggg ttgtttgggt tgnggctcan tgtcagttcc anataataac ttcttggtct 300
aggcacatga atattgttgt ggggaanaga ctgataataa aggtggatgc gacaatggat 360
tttacataat gggggtatna gtt 383

<210> 679
<211> 371
<212> DNA
<213> Homo sapien

<400> 679
aaaatgaaaa tattgacaag agtttcagat agaaaatgaa aaacaagcta agacaagtat 60
tggagaagta tagaagatag aaaaatataa agccaaaaat tggataaaat agcactgaaa 120
aaatgaggaa attattggta accaatttat tttaaaagcc catcaattta atttctggtg 180
gtgcagaagt tagaaggtaa agcttgagaa gatgagggtg tttacgtaga ccagaaccaa 240
tttagaagaa tacttgaagc tagaagggga agttggttaa aaatcacatc aaaaagctac 300
taaaaggact ggtgtaattt aaaaaaaact aaggcagaag gcttttggaa gagttagaag 360
aatttggaag g 371

<210> 680
<211> 176
<212> DNA
<213> Homo sapien

<400> 680
cctaggattg tgggggcaat gaatgaagcg aacagatttt cgttcatttt ggttctcagg 60
gtttgttata attttttatt tttatgggct ttggtgaggg aggtaagtgg tagtttgtgt 120
ttaatatttt tagttgggtg atgaggaata gtgtaaggag tatgggggta attatg 176

<210> 681
<211> 152
<212> DNA
<213> Homo sapien

<400> 681
ctggagatgg atatgagact agtcaagatg tgaatgctaa ttggagagaa atataatttt 60
aggaagatgc acattgatgt ggggttttga tgtgtctgat tttgactact caagctctgt 120
ttacagaaga aaattgaatg gcgagggtgt gg 152

<210> 682
<211> 141
<212> DNA
<213> Homo sapien

<400> 682
ccagtgcttg cttgccgtgg tttagtgatt gggtgttaga aataaaaact caggtctatt 60
tcttaccagt cagtaacaat ttttagagaa tgtacttggt atataatata tggacttcag 120
gaactttgtt ggggtggggg g 141

<210> 683
<211> 308
<212> DNA
<213> Homo sapien

<400> 683

ccagcaatgg tacagagtga gggtgttctg ctaatgactt cagagaagta tttaagaaaa 60
acatagaaaa acgtgtgcgg agtttgccag aaatagatgg cttgagcaaa gagacagtgt 120
tgagctcatg gatagccaaa tatgatgcca tttacagagg tgaagaggac ttgtgcaaac 180
agccaaatag aatggcccta agtgcagtgt ctgaacttat tctgagcaag gaacaactct 240
atgaaatgtt tcagcagatt ctgggtatca aaaaactaga acaccagctc ctttataatg 300
catgtcag 308

<210> 684
<211> 277
<212> DNA
<213> Homo sapien

<400> 684
tggtattagg attaggatgt gtgaagtata gtacggatga gaaggttggg gaacagctaa 60
ataggttgtt gttgatttgg ttaaaaaata gtagggggat gatgctaata attaggctgt 120
gggtggttgt gttgattcaa attatgtgtt ttttggagag tcatgtcagt ggtagtaata 180
taattgttgg gacgattagt tttagcattg gagtaggttt aggttatgta cgtagtctag 240
gccatatgtg ttggagattg agactagtag ggctagg 277

<210> 685
<211> 457
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(457)
<223> n = A,T,C or G

<400> 685
ctgtggcgtn ccctacttct cccaaacctc gcaactccct cccaggacag tcagtgccaa 60
agaaacaggt cgctgaaaac taaaatgtcc acatccctaa ctggcaaccc acatcaaccc 120
caaaaggttg aagaatcatc taagatattt cagatgctct atgaagaaat tcactttaac 180
acttataact gtaagacttt gcatacatta caacagtgca ttagtgatac aagttgtaaa 240
atacgtttcc attcctttgg attttgcata tgatggtttt gcatcagtca ctgcaggtag 300
attgagcaag ctttttgtgt ttgttttttt aaacatgcat tcaactagat atgattcaga 360
atagattaat actccctttt tatcactaca gttagctaaa aaattgccag gcagtccaca 420
aaacagaatt tgctttaaga ccaacccaca gagtcag 457

<210> 686
<211> 234
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(234)
<223> n = A,T,C or G

<400> 686
ntggatttat aaaatagttg caatgacaaa agaagtatgt tttgacagta aaaaaaagac 60
attatggaca aaatatgcaa aatgtgcaaa gaaaaaataa atttgcatta gaaaggtggg 120
catttgatct ctgagccctg tgccatgtaa cattgccatg ttctttcact gttgtttgaa 180
tgttgtaccc cagcccttga ctctggactt aaggcaagct atgactggct ttgg 234

<210> 687
<211> 315
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(315)
<223> n = A,T,C or G

<400> 687
nngtctgtga aaaactcttt ggatgattct gccaaaaagg tacttctgga aaaatacaaa 60
tatgtggaga attttggtct aattgatggt cgcctcacca tctgtacaat ctcctgtttc 120
tttgccatag tggctttgat ttgggattat atgcacccct ttccagagtc caaacccgtt 180
ttggctttgn gtgtcatatc ctattttgtg atgatgggga ttctgaccat ttatacctca 240
tataaggaga agagcatctt tctcgtggcc cacaggaaag atcctacagg aatggatcct 300
gatgatattt ggcag 315

<210> 688
<211> 522
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(522)
<223> n = A,T,C or G

<400> 688
ctgaattaga ggaggagaaa agaagccatt nnggagtact ttaattgttt agatgtgaga 60
ggctgaatgt ttgggttaag atgttagttg tcagaatcat gagaaaaggt tttaagcaag 120
gggcatttct aattctaaaa ataacaacta ctgttattta ttgagcacta tctttttgtt 180
gggtactgtc taaagtactt gatttatttt ttaaaacctt acaaaaaact tacaaggtag 240
gtactgaaag attcagtaat ttgttcaaag tcacacagca aataagcaac agactctgga 300
tttgaaccag gcaatcctag agcctgtact gttagtaatt atactttagc acctgtcaag 360
aattcctgtt gagtgtcaag aagcaancac caagttagga tttaaagcaa acatgattga 420
agaatactgt ggtgtggttg acagtagtgc ctaagtctgt tttcagagtg aaaaatgaca 480
aattagattt taagtatggt ttggagataa tatcaggaca gt 522

<210> 689
<211> 158
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(158)
<223> n = A,T,C or G

<400> 689
tctcaactta ntntnatacc cacacccacc caanaacagg gtttgttagg nattgtttgc 60
attaataaat taaagctcca tagggtcttc tcgtcttgct gtgtcatgcc cgcctcttca 120
cgggcaggtc aatttcactg gttaaaagta agagacag 158

<210> 690
<211> 300
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(300)
<223> n = A,T,C or G

<400> 690
```
tagaactcgt atttttaaac ttctattctc tanccttttc cactacatta tgacacaaga      60
ccctgcagaa agtcgtctgg aaaatatcag accatctctt acttgtccca tccaatctta     120
catcgaatta tatgcaccct taaaaagtta tttggagttt taaaaaactc tattagccca     180
aattacctga aataaactcc tggcttgttc ccctaatgtt tataaaaaat tgattgaaaa     240
tattcatttt aaaaatgaag ntcttgaatt tatttaaatt actgtcttgc agtgagttgg     300
```

<210> 691
<211> 305
<212> DNA
<213> Homo sapien

<400> 691
```
ctgttcagaa agctcattgg acctggtttt gaaaataaaa caaagttaaa accctgggag      60
gagttattgt gcagtgtgga gtactcaggc tttcttataa agaaaaaaaa agttatctgg     120
taccaaagtg tgcaacctac agaccctcag gtactgccct gtgacttctc tgtatgacat     180
cacaaggctg ccaagtgcct gtttttctag aactaggagt tggtgaggtt tggctagtgc     240
tgaaaccatg cataggattg gtttactaaa ttaaaacctt attacgtacg tcctccaaaa     300
gacag                                                                 305
```

<210> 692
<211> 582
<212> DNA
<213> Homo sapien

<400> 692
```
caggaaatgg ataaccattt taactgtatt ttttgcagcc cgtaccttct tgggaataca      60
attgtctaac tttttatttt tggtctggct gttgtggtgt gcaaaactcc gtacattgct     120
atttgccac actgcaacac cttacagatg tggaagatgt gaaatttgtc atcaattatg      180
actaccctaa ctcctcagag gattatattc atcgaattgg aagaactgct cgcagtacca     240
aaacaggcac agcatacact ttctttacac ctaataacat aaagcaggtg agcgacctta     300
tctctgtgct tcgtgaagct aatcaagcaa ttaatcccaa gttgcttcag ttggtcgaag     360
acagaggtgc aggtaaggat gactgatagg aaatgttggt agttacgagt cacatcgttg     420
tctacaaatc catttaaatg gtattggagg gtgagtaaaa ccttgaatgt gaaaacttaa     480
gctgaaaaat tgtaaaaaca tttcacgcct accatgaata gatctgtttc tttctgtcca     540
caatgatttg tgtcatagac ataattgatc aatttgcaat tg                        582
```

<210> 693
<211> 275
<212> DNA
<213> Homo sapien

<400> 693

ccaattgatt tgatggtaag ggagggatcg ttgacctcgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg 180
gcatacagga ctaggaagca gataaggaaa atgactatga gggcgtgatc atgaaaggtg 240
ataagctctt ctatgatagg ggaagtagcg tcttg 275

<210> 694
<211> 397
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(397)
<223> n = A,T,C or G

<400> 694
nggtctgcat ttttattgcg atctgcagat gaactggaaa atctcatttt acaacagaac 60
tgagacagac gaccaccata ttcactgagg tctaaatttg cagtttccac taatgacatt 120
ttgatttccc aacagagata cttctggtct tactgcacag tcttttaaga gaaatacttc 180
cattatgcca cattgtcctt gatccgtaag tgatgtgtta aggtgcttca aaggaactct 240
gacctctgaa gtacttgagc tactttagta tgtccagcct attgcttttt gttttagtgt 300
gtcaccataa atatcagggg cataaaaggc tatctattct taattcaagg ataaaacaga 360
agaagcttgt ggtataaaac aatagttcaa gatccag 397

<210> 695
<211> 609
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(609)
<223> n = A,T,C or G

<400> 695
ctgagcttcc atttgtcagc tagcactgng gtagtcaacc atgcgaatga ggctattttg 60
gacctcatga ttgtccagtg cctgggctga taccgnggga aacgaaattt tgtggctgcc 120
cacaaaatca tggaaaataa tgatttttta gaaaacctcc actgntttgt tgtgcagcaa 180
taaataactg aaacaccaat ccaaaaaact tataaagcta taacaattaa aacagnataa 240
taatagtncc gggatacaaa aatggtcaaa ttgaagagga tacaaagcct caaagcagtc 300
ctcactcata ananccttgt tgtatcacta aaanggcatt aaaattgaga anaaggaana 360
actagtggat taattaataa atgagaagta tccataagga aaaattaaaa ttnnattctt 420
gcttcacatt atgaaaaaat acaaacaaca gattgattaa agacttaaat gngatcaaca 480
aaatgttaaa actgtgataa gaacatttaa gaaaatagtt ctatnaccct gggataaaac 540
attttcntcc aaggcattaa agtgttaaat gaaaagactg atncatttat tcattagaat 600
ttaaattcn 609

<210> 696
<211> 300
<212> DNA
<213> Homo sapien

<400> 696

ctgcaaaata agcgtgctaa attaaattgt cttaaggttt ttccacttca ttttgtgact 60
ttgtgtggtt cgaatttctc agtattttaa ccagtgtgtt gatgttaaag tcaaaggctg 120
cagtatgtct atattcttgc tgtactcatt ggtagtttca gtatatgtaa tgtgagttta 180
aatagtgaaa ttgtatctca tattaacatt tcaaatgctc atattgaaaa tggaaaatag 240
taaacacggg aattgatttt attctggttg tctataatac ttcattttaa atgtaaatgg 300

<210> 697
<211> 391
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(391)
<223> n = A,T,C or G

<400> 697
nngtcatgtn tgatgnatct gancaggttg ctccacaggt agctctagga gggctggcaa 60
cttagaggtg gggagcagag aattctctta tccaacatca acatcttggt cagatttgaa 120
ctcttcaatc tcttgcactc aaagcttgtt aagatagtta agcgtgcata agttaacttc 180
caatttacat actctgctta gaatttgggg gaaaatttag aaatataatt gacaggatta 240
ttggaaattt gttataatga atgaaacatt ttgtcatata agattcatat ttacttctta 300
tacatttgat aaagnaaggc atggttgtgg ttaatctggt ttatttttgn tccacaagtt 360
aaataaatca taaaacttga acaaaaaaaa a 391

<210> 698
<211> 536
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(536)
<223> n = A,T,C or G

<400> 698
ctgagcatac agcaataaaa ataacataat ttttatgtgt acaatattta tggaatacgt 60
tactggaaca gataaataat ttagttaata acatgacaaa gaacagaaat tgtatacact 120
atacagcata gtaatagaat aatgaatgat taaagttatt aatattaggt agaaaatgaa 180
gggtatcttt gagagcagaa ctcaaggaag caagcaattt gccttatgag gaaagagtta 240
cctgtggata aaggagaaac tgaaaaattt acaagtcaag actttttgag caaagacaaa 300
aatatgacta tgagtcacca attcagtaca gtgaaaaaaa agttgaagag atatcttgga 360
agtaaaccat gttgtggaag agcagggttt tgataatcat gggattattc tgaatgaatt 420
ttaaatgcga taggaatata tgagataatt tcaccagaga ataatatgat catgtttgca 480
tttcaaaggg gtgtatctgg tgcactgngt agaataaata ggntatgtga gcaagt 536

<210> 699
<211> 419
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(419)

<223> n = A,T,C or G

<400> 699
ngtccacctg agggcaggtg acaaggacct gacagagccc atgcagggct ttagatttgg 60
acacacaaga gttgataact tcctcatgaa ctccttgcct gatctaaact catattatgg 120
gttctgactg tttgagtaat catcttcaag gttaaacctc ttggcagtta ccccttttcac 180
aaagtgcaca gtgggaatcg agaatcgata gggttaattt tggagcagtg gcttatacca 240
ttcacctctg tttttttgtg attatttcac agataatgag accttaataa caaataggcg 300
taaaaaaatt ttcacattga aatgatagaa acatttgatg taataaaact tggttggctt 360
gatattttaa ggaattgaaa cctagcaatc ttattggaga gacaagaatt ggtctccag 419

<210> 700
<211> 336
<212> DNA
<213> Homo sapien

<400> 700
ccacttattg tccttaaaaa tccatactga tacatggaca gtaagtgtgt tttcagatgg 60
agtaccagca ccgaaaatgg gttgagggag gatgggttgt atgtatgttt ctgcccacta 120
attttgagca gccatattat gaattaaatc gtcacagcca agtaataacc caagaatggt 180
atgagtttca tgtgtaatag ctcaaatgga ataagcatga atgctggagt ggaccattat 240
cctcaaatat tctatgtcac ttctcattta aagactcttg ttatgaacta ttagaaactt 300
taggcaaaat caaaagtatt tgcggcaaaa taaagg 336

<210> 701
<211> 418
<212> DNA
<213> Homo sapien

<400> 701
ccatgtgatg atgttgacaa cccctgaaga gcctcagtcc attgttccac gtttaagaac 60
taggaatacc aggactgatg caattctact gggtcactat cgcttgtcac aagacacaga 120
caatcagacc aaagtatttg ctgtaataac taagaaaaaa gaagaaaaac cacttgacta 180
taaatacaga tattttcgtc gtgtccctgt acaagaagca gatcagagtt ttcatgtggg 240
gctacagcta tgttccagtg gtcaccagag gttcaacaaa ctcatctgga tacatcattc 300
ttgtcacatt acttacaaat caactggtga gactgcagtc agtgcttttg agattgacaa 360
gatgtacacc cccttgttct tcgccagagt aaggagctac acagctttct cagaaagg 418

<210> 702
<211> 261
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(261)
<223> n = A,T,C or G

<400> 702
gggcctgttg tgggggtggg ggaagcaggg aggggaacag ctaaataggt tgctgttgat 60
ttggttaaaa aatagtaggg ggatgatgct aataattagg ctgngggtgg ttgtgttgat 120
tcaaattatg tgttttttgg agagtcatgt cagtggtaga aatataattg ttgggacnat 180
tagntttagc attggagtag gtttaggtta tgtacgtagt ctaggccata tgtgttggan 240
attgagacta gtagggctag g 261

<210> 703
<211> 261
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(261)
<223> n = A,T,C or G

<400> 703
gggcctgttg tgggggtggg ggaagcaggg aggggaacan ctaaataggt tgctgttgat 60
ttggttaaaa aatagtaggg ggatgatgct aataattagg ctgngggtgg ttgtgttgat 120
tcaaattatg tgttttttgg agagtcatgt cagtggtagt aatataattg ttgggacnat 180
tagntttagc attggagtag gtttaggtta tgtacgtagn ctaggccata tgtgttggag 240
attganacta gtagggctag g 261

<210> 704
<211> 381
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(381)
<223> n = A,T,C or G

<400> 704
ngtntgaatt ctattaaaga tacaaagagg agctggtacc atttcttctg aaactattac 60
aaacaactga aaaggtggaa tttctcccta attcatttta ggaggccagc attatactga 120
taccaaaacc tggcagaggt acaataataa aaggaaactt caagtcagta tcactgatga 180
acaccaatgt gaaaatcctc aataaaatac tggcaaactg aattcagcag cacatcaaaa 240
agctaatcca ccacaatcaa gtcagcttca tccctgcgat gcaagtctgg ttcaacatat 300
gcaaatcaat aaatacaatt catcagataa acagagctaa agacaaaatt cacatgattt 360
tctcaataga tgcagaaaag g 381

<210> 705
<211> 477
<212> DNA
<213> Homo sapien

<400> 705
ctgaaccctc gtggagccat tcatacaggt ccctaattaa ggaacaagtg attatgctac 60
ctttgcacgg ttagggtacc gcggccgtta aacatgtgtc actgggcagg cggtgcctct 120
aatactggtg atgctagagg tgatgttttt ggtaaacagg cggggtaaga tttgccgagt 180
tccttttact ttttttaacc tttccttatg agcatgcctg tgttgggttg acagtgaggg 240
taataatgac ttgttggtga ttgtagatat tgggctgtta attgtcagtt cagtgtttta 300
atctgacgca ggcttatgcg gaggagaatg ttttcatgtt acttatacta acattagttc 360
ttctataggg tgatagattg gtccaattgg gtgtgaggag ttcagttata tgtttgggat 420
tttttaggta gtgggtgttg agcttgaacg ctttcttaat tggtggctgc ttttagg 477

<210> 706
<211> 266

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(266)
<223> n = A,T,C or G

<400> 706
ccatggctag gtttatagat agttgggtgg ttggtgtaaa tgagtgaggc aggagtccga 60
ggaggttagt tgtggcaata aaaatgatta aggatactan tataagagat caggntcgtc 120
ctttagtgtt gtgtatggct atcatttgtt ttgaggntag tttgattagt cattgttggg 180
tggtaattag tcggttgttg atgagatatt tggaggtggg gatcaataga gggggaaata 240
gaatgatcag tactgcggcg ggtagg 266

<210> 707
<211> 358
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(358)
<223> n = A,T,C or G

<400> 707
ccatcagaga aatgcaaatc aaaaccacaa tgagatacca tctcacacca gttagaatgg 60
caatcattaa aaagtcagga aacaacaggt gctggagagg atgtggagaa ataggaacac 120
ttttacaccg ntggtgggac tgtaaactag ttcaaccatt gtggaagtca gtgtggcgat 180
tcctcaagga tctagaacta gaaataccat ttgacccagc cggccaatat tcaacattct 240
taaaggaaag aattttcaac ccagaatttc atatccagcc aaactaagct tcgttagtga 300
aggagaaata aaatacttta cagacaagca aatactgaga gattttgtca ccaccagg 358

<210> 708
<211> 491
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(491)
<223> n = A,T,C or G

<400> 708
cctactatgg gngttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga 60
gctgttcctc tttggactaa cagttaaatt tacaagggga tttagagggt tctgtgggca 120
aatttaaagt tgaactaaga ttctatcttg gacaaccagc tatcaccagg ctcggtaggt 180
ttgtcgcctc tacctataaa tcttcccact attttgctac atagacgggt gtgctctttt 240
agctgttctt aggtagctcg tctggtttcg gggtcttag ctttggctct ccttgcaaag 300
ttatttctag ttaattcatt atgcagaagg tataggggtt agtccttgct atattatgct 360
tggttataat ttttcatctt tcccttgcgg tactatatct attgcgccag gtttcaattt 420
ctatcgccta tactttattt gggtaaatgg tttggctaag gttgtctggt agtaagggng 480
gagtgggttt g 491

<210> 709
<211> 460
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(460)
<223> n = A,T,C or G

<400> 709
nggttttttt tgtagagcaa ataatttatg caaaatatgt tacaaaatct gggatgctaa 60
atagttgaca caagtactgt gtttgacatt tagtttcatt tgaattagta atagaatttg 120
ctccttccaa catttacatc tttttctttt ctgactttat atattttcaa taaaaatttg 180
ctccacagtt tttaagntca ttcttcttga atccgntttt acatttgctg ngacaaacct 240
gcataaaact agattttata gatataactt ctttggaaga gataaaaatt caaaagtttg 300
acattgcttt canttattct tttcttcatt gttttgattg gcccctgtta gattgatgta 360
ttgccaatct actttttgatg gcatgaatnt aaaatgacaa cataaaaagc ncttctagtg 420
caacagtaat tgaaacttgc agttttccat taaaaaaaaa 460

<210> 710
<211> 542
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(542)
<223> n = A,T,C or G

<400> 710
ctgttacagt gacaagagat aaaaagatag acctgcagaa aaaacaaact caaagaaatg 60
tgttcagatg taatgtaatt ggagtgaaaa actgtgggaa aagtggagtt cttcaggctc 120
ttcttggaag aaacttaatg aggcagaaga aaattcgtga agatcataga tcctactatg 180
cgattaacac tgtttatgta tatggacaag agaaatactt gttgttgcat gatatctcag 240
aatcggaatt tctaactgaa gctgaaatca tttgngatgt tgtatgcctg gtatataatg 300
tcagcaatcc caaatccttt gaatactgtg ccaggatttt taagcaacac tttatggaca 360
gcagaatacc ttgcttaatc gtagctgcaa agtcagacct gcatgaagtt aaacaagaat 420
acagtatttc acctactgat ttctgcagga aacacaaaat gcctccacca caagccttca 480
cttgcaatac tgctgatgcc cccagtnagg atatctttgt taaattgaca acaatggacc 540
tg 542

<210> 711
<211> 394
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(394)
<223> n = A,T,C or G

<400> 711
caaacccact ccaccttact accagacaac cttagccaaa ccatttaccc aaataaagta 60

taggcgatag aaattgaaac ctggcgcaat agatatagta ccgcaaggga aagatgaaaa 120
attataacca agcataatat agcaaggact aacccctata ccttctgcat aatgaattaa 180
ctanaaataa ctttgcaagg agagccaaag ctaagacccc cgaaaccaga cgagctacct 240
aagaacagct aaaagagcac acccgtctat gtagcaaaat agtgggaaga tttataggna 300
gaggcgacaa acctaccgag cctggtgata gctggttgtc caagatagaa tcttagttca 360
actttaaatt tgcccacaga accctctaaa tccc 394

<210> 712
<211> 552
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(552)
<223> n = A,T,C or G

<400> 712
gaggtctgta naatgccagg ctcaaatttg tctttataat ttaataccag aaatctttcc 60
cttgtgatgt ttctttcttt ctggattgcc tctatagcag gggatagcgg gggaggataa 120
ggcacatctt tgntgtactg agaaatttga ccacgcagga tgatgtggct gttctcattc 180
atctgcacag agaaaaataa tgataaaata tccctttcct atgtttactg attttatggc 240
tgccataatg gaagcctcct tgactattta atcctttctg tcaactaggt tcgatttttt 300
ttttaattta cctgttagag gtatttaana attttaacta gctanaaata attacattcc 360
aaaggaacac caaggcaaat aaatggttgg taatcagcaa aagaattaca ttagttgttg 420
ntgctactta ttagggggag aactgttttt ttttaaattt aaacaattta ataatctcaa 480
ctgcaaataa ttttagatgc agcaaaggac tatgtagncg ttaatacctc atgttgatat 540
tttcataata tt 552

<210> 713
<211> 518
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(518)
<223> n = A,T,C or G

<400> 713
ccaaaaactg gaagcagctc actaaacaaa cagtggcata cccatagaac tgcatacttc 60
tcagcagtat gaaagaatga gctacttata taagcatcat tgataaacct caaaaaaaaa 120
atgccacatg aanaaaccca aaggggaaa acataaaaac tttatatgtc agtcatataa 180
aattctanaa aatgcaaact aatccatcnt aaaggaaagt aaatcaacag ttgtctggag 240
gaccananag agcaggagga ganagattat taaaggggtt aaagtaaatt tgggagtgcc 300
cttccntttt taaatnctat gaaaatgaaa gtaaaggcnc atgcatgttg taaactaata 360
gtaacaaaca naatgggttg gagtggggtg ttgtctgggg acatcattac aaaatgtaag 420
ccagtttatn taaattttga aaagaccgtg gactctgatc tgactgatna atgttggaag 480
agataagtgt gctgcaaatg gggaattaa taaaacag 518

<210> 714
<211> 281
<212> DNA
<213> Homo sapien

<400> 714
ccaattgatt tgatggtaag ggagggatcg ttgacctcgt ctgttatgta aaggatgcgt 60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct 120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg 180
gcatacagga ctaggaagca gataaggaaa atgactatga gggcgtgatc atgaaaggtg 240
ataagctctt ctatgatagg ggaagtagcg tcttgtagac c 281

<210> 715
<211> 443
<212> DNA
<213> Homo sapien

<400> 715
cttgaaatca gcaacacact tacaaatgag aaaatgaaaa tagaagagta tataaagaaa 60
gggaaagagg attatgaaga gagtcatcag agagctgtgg ctgcagaggt atccgtactt 120
gaaaactgga aggagagtga agtgtataag ctacagatca tggagtcaca agcagaagcc 180
tttctgaaga agctggggct gattagccgt gatcctgcag catatcccga catggagtct 240
gatatacgtt catgggaatt gtttctttct aatgttacaa aagaaattga gaaagcaaag 300
tctcagtttg aagaacaaat taaggcaatt aaaaatggtt cccggctcag tgaactttct 360
aaagtgcaga tttctgagct ttcatttcct gcctgtaaca cggttcatcc cgagttactc 420
cctgagtctt caggccacga tgg 443

<210> 716
<211> 639
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(639)
<223> n = A,T,C or G

<400> 716
ccaaanaaaa tgaagtacag agtctgcata gtaagcttac agataccttg gtatcaaaac 60
aacagttgga gcaaagacta atgcagttaa tggaatcaga gcagaaaagg gtgaacaaag 120
aagagtctct acaaatgcag gttcaggata ttttggagca gaatgaggct ttgaaagctc 180
aaattcagca gttccattcc cagatagcag cccagacctc cgcttcagtt ctagcagaag 240
aattacataa agtgattgca gaaaaggata agcagataaa acagactgaa gattctttag 300
caagtgaacg tgatcgttta acaagtaaag aagaggaact taaggatata cagaatatga 360
atttcttatt aaaagctgaa gtgcagaaat tacaggccct ggcaaatgag caggctgctg 420
ctgcacatga attggagaag atgcaacaaa gtgtttatgt taaagatgat aaaataagat 480
tgctggaaga gcaactacaa catgaaattt caaacnaaat ggaagaattt angattctaa 540
atgaccaaaa canagcatta aaatcagaag ttcagaagct gcagactctt gtttctgcac 600
angcctaata aggatgntgn ggaacaaatg gaaaaattg 639

<210> 717
<211> 473
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(473)

<223> n = A,T,C or G

<400> 717
nntgaggcta ctgctgtttt attacaacat tacctcttgt ttttataaag tgtaccaaga 60
tttaaattga taactttatt ttacttgaaa aaaaaaagtt tnttttatca ccagtgttac 120
agttgtcttc tgtttctttt tgttttgntt tatttgnttt ccttttttagc caaagagtga 180
acagaanatt ttcttatttt ggtggctatt cattttactt ttaaaagtga ttggtggatt 240
ttagactaat tatgggggaa tttgccacca aaataaaaaa tatgtaaagn gtagtgatta 300
cagagtggtt aaaatgtggg ttagtactta tttattccat taattgatta tttgactgtt 360
tataaagaaa gttgctttat ttctttaaac atcttcaaaa gatgatcctt tcttgtcaca 420
ttatagccaa aagaagcaga gaacttcact gtctgcattt ggttcctggt tgg 473

<210> 718
<211> 207
<212> DNA
<213> Homo sapien

<400> 718
ggtaaatgct agtataatat ttaccatctc acttctagga atactagtat atcgctcaca 60
cctcatatcc tccctactat gcctagaagg aataatacta tcactgttca ttatagctac 120
tctcataacc ctcaacaccc actccctctt agccaatatt gtgcctattg ccatactagt 180
ctttgccgcc tgcgaagcag cggtagg 207

<210> 719
<211> 255
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(255)
<223> n = A,T,C or G

<400> 719
cctatattac ggatcatttc tctactcaga aacctgaaac atcggcatta tcctcctgct 60
tgcaactata gcaacagcct tcataggcta tgtcctcccg tgaggccaaa tatcattctg 120
aggggccaca gtaattacaa acttactatc cgccatccca tacattggga cagacctagt 180
tcaatgaatc tgaggaggct actcagtaga cagncccacc ctcacacgat tctttacctt 240
tcacttcatc ttgcc 255

<210> 720
<211> 455
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(455)
<223> n = A,T,C or G

<400> 720
ccaatgtcga aacctacaag atttccttaa aatctctaat agaggcatta cttgctttca 60
attgacaaat gatgccctct gactagtaga tttctatgat cctttttttgt cattttatga 120
atatcattga ttttataatt ggtgctattt gaanaaaaaa atgtacattt attcatagat 180

agataagtat caggtctgac cccagtggaa aacaaagcca aacaaaactg aaccacaaaa 240
aaaaaggctg gtgttcacca aaaccaaact tgttcattta gataatttga aaaagctcca 300
tagaaaaggc gtgcagtact aagggaacaa tccatgtgat taatgnttnc attatgttca 360
tgtaanaagc cccttatttt tagccataat tttgcatact gaaaatccaa taatcagaaa 420
agtaattttg ccacattatt tatnaaaaat gttcc 455

<210> 721
<211> 530
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(530)
<223> n = A,T,C or G

<400> 721
ccagtgcttg ctgccgtggt ttagtgattg ggtgttagaa ataaaaactc aggtctattt 60
cttaccagtc agtaacaatt tttagagaat gtacttggta tataatatat ggacttcagg 120
aactttattg gggngggggg ttaattttgc cttaccctgt tcactttcag atgattaggc 180
ttttgcactt tagaatgaga aacttgtgac gttagtgtgt tcttactagc tttaatttgt 240
atgtagcaat gaattgtgaa tcttagtgca gtgggttttt ttaaaaaact caaaaagctg 300
ggaattaagt ggtttcagta ataatgctat accgaggtgc ttgcattgta tttcataatt 360
ttgttacaaa ccaaaattat ttttaatgan aacggtcttg ggttcagagg tgtgatgcca 420
gaatgtattt tcgtactgtt aggccccttgg aacagatacc ggtgctttct tgaaagatga 480
aagaaatgca atgggtgctc ttcatgcaag gttgcaaacc taccaagaat 530

<210> 722
<211> 242
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(242)
<223> n = A,T,C or G

<400> 722
ccaagggtca tgatggcagg agtaatcana ggtgntcttg tgttgtgata agggnggaga 60
ggttaaagga gccacttatt agtaatgttg atagtagaat gatggctagg gtgacttcat 120
atgagattgt ttgggctact gctcgcagtg cgccgatcag ggcgtagttt gagtttgatg 180
ctcatcctga tnagaggatt gagtaaacgg ctaggctaga ggtggctaga ataaatagga 240
gg 242

<210> 723
<211> 472
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(472)
<223> n = A,T,C or G

<400> 723
cctactatgg gtgttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga 60
gccgttcctc tttggactaa cagttaaatt tacaagggga tttagagggt tctgtgggca 120
aatttaaagt tgaactaaga ttctatcttg gacaaccagc tatcaccagg ctcggtaggt 180
ttgtcgcctc nacctataaa tcttcccact attttgctac atagacgggt gtgctctttt 240
agctgttctt aggtagctcg tctggnttcg gggtcttag ctttggctct ccttgcaaag 300
ttatttctag ttaattcatt atgcagaagg tataggggtt agtccttgct atattatgct 360
tggttataat ttttcatctt tcccttgcgg tactatatct attgcgccag gtttcaattt 420
ctatcgccta tactttattt gggtaaatgg tttggctaan gttgtctggt ag 472

<210> 724
<211> 292
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(292)
<223> n = A,T,C or G

<400> 724
nccaccactg cagccctaca tacagntgaa aaaaaattcc attctgttaa catttgtttt 60
ataagttttc acncaataca caaaaaaccc ctctgcactt cttgtaaaga acaaaaaaga 120
tacacaacag ttaagcgtaa agatcacagg caatagcatt caaacatgga tgtgggnaga 180
gaaaggagta cctggcatga gtacctgctt agttngactg aatccttgat ttttaatttg 240
gcttttcatg ggccgntcac aacaccaacg ctgngngagg tatggtagtc ag 292

<210> 725
<211> 122
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(122)
<223> n = A,T,C or G

<400> 725
atagaaaggg catacccaaa atgttactga aaatntaata caaattccaa gattcaccaa 60
ngaagtaaca aaaacctggc ctgcangngg ncccctatcc cgtggctcca tggntgatgt 120
gg 122

<210> 726
<211> 477
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(477)
<223> n = A,T,C or G

<400> 726
ctgaaccctc gtggagccat tcatacaggt ccctaattaa ggaacaagtg attatgctac 60

ctttgcacgg ttagggtacc gcggccgtta aacatgtgtc actgggcagg cggtgcctct 120
aatactggtg atgctagagg tgatgttttt ggtaaacagg cggggtaaga tttgccgagt 180
tccttttact ttttttaacc tttccttatg agcatgcctg tgttgggttg acagtgaggg 240
taataatgac ttgttggtga ttgtanatat tgggctgtta attgtcagtt cagtgtttta 300
atctgacgca ggcttatgcg gaggagaatg ttttcatgtt acttatacta acattagttc 360
ttctataggg tgatagattg gtccaattgg gtgtgaggag ttcagttata tgtttgggat 420
tttttaggta gtgggtgttg agcttgaacg ctttcttaat tggcggctgc ttttagg 477

<210> 727
<211> 416
<212> DNA
<213> Homo sapien

<400> 727
cctgtctttg aatggatgaa ataggttaat aaaaaacatc actgtttaaa aactagaaca 60
ctgaaaaatt ctaggaaagc ttattttccc ttatattttt atggtacttt caacacttaa 120
taacactatt tcaattaagt tttctcctag agtttatagt atatcagtac attcttttct 180
gtggatgcaa taatatagaa tcttattcca aatcttactg gcaggttctc ttaaattctt 240
caacggctgc catagtgatt aaccaaaatt agttatgatt tctgcctatc tgtgtgagaa 300
cttacagggg aaattgttct aaacctgagg aacatgaagt aactgtactg cacactccaa 360
atgatgacag tcattttata tcaccttcaa ttacccaaca gcttttaata gtctgg 416

<210> 728
<211> 416
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(416)
<223> n = A,T,C or G

<400> 728
cctgtctttg aatggatgaa ataggttaat aaaaaacatc actgtttaaa aactagaaca 60
ctgaaaaatt ctaggaaagc ttattttccc ttatattttt atggtacttt caacacttaa 120
taacactatt tcaattaagt tttctcctag agtttatagt atatcagtac attcttttct 180
gtggatgcaa taatatagaa tcttattcca aatcttactg gcaggttctc ttaaattctt 240
caacggctgc catagtgatt aaccaaaatt agttatgatt tctgcctatc tgtgtgagaa 300
cttacagggg aaattgttct aaacctgagg aacatgaagt aactgtactg cacactccaa 360
atgatgacag tcattttata tcaccttcaa ttacccaaca gcttttaata ntctgg 416

<210> 729
<211> 564
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(564)
<223> n = A,T,C or G

<400> 729
ctgtgagtag aggagtcttc ccgagagtag cagttgttga tccaaatgat tgaagccttc 60
aggtaaggga ataactgctg caggaattct ttcttgaaga atttaagctg tttggtaaga 120

```
attctgtaac tacatacctt tgaaacacta ttcacattca aataaacgct tgttttctag     180
ccaggcacag gctcaattag tttttcaaac tctagccaag gcagtatttc atttgggaaa     240
tcatgcaaca gaactgctca attcttaact tctcctgctg ttaacattta cacttagact     300
gccagcaaca gttaacttaa atttggtct caagggaaca aaaaaaaatt gcattcagaa     360
tttaatatag tattttaaaa ctaattttag cctgtaagnc attatgagca atagtaactt     420
ttatacctcc tcatcttgnc tgataatata ttctatatgc tgncaatctg attatatagt     480
ctatatgcta gaagttgctg attttcattc tgccaccaaa aaaaactgtc cttttttttt     540
tatgggggaa aaagggaatt taaa                                            564
```

<210> 730
<211> 310
<212> DNA
<213> Homo sapien

<400> 730

```
ccatttttat ttcttcttca gagaagtgtt tatttaggtc tgttgcccat tttacaatta      60
ggccatatgt tttcttgctg ttgagttgta tgtgtgtttg tataaatttt gcatattaac     120
cccttatcac acgtatgttt ttttaaaataa attttgctta ttaatctttt atcagatgta     180
tggtttccaa atatattctt ccgatccatg gattctcttt tttgttatga ttgtttcttt     240
gctcttcgga agctttttgt tttgttttgt tatttgtttt actttgatat agtcccattt     300
attgtttttg                                                            310
```

<210> 731
<211> 467
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(467)
<223> n = A,T,C or G

<400> 731

```
ngacaacctt agccaaacca tttacccaaa taaagtatag gcgatagaaa ttgaaacctg      60
gcgcaataga tatagtaccg caagggaaag atgaaaaatt ataaccaagc ataataaagc     120
aaggactaac ccctatacct tctgcataat gaattaacta gaaataactt tgcaaggaga     180
gccaaagcta agaccccccga aaccagacga gctacctaag aacagctaaa agagcacacc     240
cgtctatgta gcaaaatagn gggaagattt ataggnagag gcgacaaacc taccgagcct     300
ggtgatagct ggttgtccaa gatagaatct tagntcaact ttaaatttgc ccacagaacc     360
ctctaaatcc ccttgtaaat ttaactgnta gnccaaagag gaacagntct ttggacacta     420
ggaaaaaacc ttgtagagag agtaaaaaat ttaacaccca tagtagg                   467
```

<210> 732
<211> 492
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(492)
<223> n = A,T,C or G

<400> 732

```
cctactatgg gtgttaaatt ttttactctc tctacaaggt tttttcctag tgtccaaaga      60
```

gctgttcctc tttggactaa cagctaaatt tacaagggga tttagagggt tctgtgggca 120
aatttaaagt tgaactaaga ttctatcttg gacaaccagc tatcaccagg ctcggtaggt 180
ttgtcgcctc tacctataaa tcttcccact attttgctac atagacgggt gtgctctttt 240
agctgttctt aggtagctcg tctggnttcg gggtcttag ctttggctct ccttgcaaag 300
ttatttctag ttaattcatt atgcagaagg tataggggtt agnccttgct atattatgct 360
tggntataat ttttcatctt tcccttgcgg tactatatct attgcgccag gtttcaattt 420
ctatcgccta tactttattt gggtaaatgg tttggctaag gttgtctggt agtgaggcgg 480
agngggtttg gg 492

<210> 733
<211> 562
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(562)
<223> n = A,T,C or G

<400> 733
ntgaaatggc aatagcattc actgtcgtat tttgcagtgc tcaggaagtg ggacgttaac 60
tttgaaggtg cttgtttgta ttagctctgc taggtttacc tctacaacgt agatttcagc 120
agctatgctg actgacacta cattctagtt cttaagattt tttttccana tcccccccttc 180
cccagctaga catacgtagc atactttcat cttattcagt ctttctgtaa cctgctgctg 240
cttttagtcc tcctcacctc agatcggaat caatggagtg ggcccagagg atacatttta 300
attccagtaa tggtaggtag atttgtcctg ctttctaaaa catctcctca tttcatattt 360
ccactccata ttgattccat aagggaaaat taatgggtgn ttcctccttt agggaggcaa 420
tgcaaagagn gtggacatct tctaatcttg aggaacagtn gttgatttcc cttgaaggag 480
cttacatatt gactgtnttt cacaataacc tgnttgcccc agntcaatcc ctcattttaa 540
tacttaatgt tggtnctggg ct 562

<210> 734
<211> 265
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(265)
<223> n = A,T,C or G

<400> 734
nggtccagaa caagagaaat aactgcagaa aacacatatg gttggaaacc atgcgcttgt 60
gactttttct gtagcctatg ggagtggaca gagtgggtaa cccaagatgt ttttaagact 120
gactggacta agaatggcgt acttatagcc aactacttcc cccctaatgt gactgaaggg 180
attcataatg atcacaatta gcattacggt taagtatttt agggttgacg tctaagctca 240
cacttgaaag gtatttatct aatgg 265

<210> 735
<211> 216
<212> DNA
<213> Homo sapien

<400> 735

atttaatacg tgctcactgc tcggcacgcg ctgaagctac agttaacaat cagtgagcac 60
atattaaatg ataaaataat gctgatggta aacattcata acagcagagt aagattttgg 120
cagttttgtg tctcggtaac ataactgtaa ccttagatga acacctatcc cttcatgatc 180
tgactttaga ggcaaggagt ttgtaacatc taatgg 216

<210> 736
<211> 285
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(285)
<223> n = A,T,C or G

<400> 736
ctgaaaggca acntggagac tagttagtct agtcccctca tattataaat tggtatgctg 60
aggccaggca gtaaattgct atggagctct ccaatttaag gccagtttga ctccaagggt 120
agggcttcta gtaaaatttt gtgattaaat tggaaactct aatttatttt tctatgngtt 180
tttggtacct aatcctcata agcaagccat atttcaaggc tgatcaatga aaacaccaaa 240
taccaaagct tcctttccct tccaaattta ctgacccttt gtcag 285

<210> 737
<211> 509
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(509)
<223> n = A,T,C or G

<400> 737
agangaagaa gangaagatt aagggaaaag tacatcggtc aagaagagct caacaaaaca 60
aagcccatct ggaccagaaa tcccgacgat attactaatg aggagtacgg agaattctat 120
aagagcttga ccaatgactg ggaagatcac ttggcagtga agcatttttc agttgaagga 180
cagttggaat tcagagccct tctatttgtc ccacgacgtg ctccttttga tctgtttgaa 240
aacagaaaga aaaagaacaa catcaaattg tatgtacgca gagttttcat catggataac 300
tgngaggagc taatccctga atatctgaac ttcattagag ggtggnaga ctcggaggat 360
ctccctctaa acatatcccg tgagatgttg caacaaagca aaattttgaa agttatcang 420
aagaatttgg gtcaaaaaat gcttanaact ctttactgaa ctggcggaag atnaagagaa 480
ctncaagana ttctatgagc agntctctt 509

<210> 738
<211> 97
<212> DNA
<213> Homo sapien

<400> 738
cagtgaattg aatacgactc ctatagggcg aattgggccc tctagatgca tgctcgagcg 60
gccgccagtg tgatggatat ctgcagaatt cgcccttt 97

<210> 739
<211> 209

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(209)
<223> n = A,T,C or G

<400> 739
```
ccgncagtgt gatggatatc tgcagaattc gcccttagcg gcccgcccgg gcagggtcct     60
tatatatagt agcttagttt gaaaaaatgt gaaggacttt cgtaacggaa gtaattcaag    120
atcaagagta attaccaact taatgttttt gcattggact ttgagttaag attatttttt    180
aaatcctgag gactagcatt aattgacgg                                      209
```

<210> 740
<211> 164
<212> DNA
<213> Homo sapien

<400> 740
```
ccaagctaat gggtgacact gtgaatgcaa ctctaatgca gcctggcgta aatggtccta     60
tgggcactaa ctttcaagtt aacacaaaca gaggaggtgg tgtgtgggaa tctggtgcag    120
caaactccca gagtacatca tggggaagtg gaaatggcgc aaat                     164
```

<210> 741
<211> 514
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(514)
<223> n = A,T,C or G

<400> 741
```
ccagtcagaa ttgagatgtg ctgtgagtgc aaaatacact caaatctaag acttagtatg     60
gaagaaaaag aagataaggt gnttcattaa taatctttta tattgattac atgttgaaat    120
gatattttta atatactggg ttacataaac tgttattaag attaattttg cttgtttctt    180
ttttaatatg gctactagaa aattaaaaat tatgttgtgg ttcacattat atttctgttg    240
aacaatgtgg acatagataa tctacagtca ttacattagc cttagaattt agcatcatac    300
ttttaagcac tctggggtac taacttgaac tcccagaaac ccataagcac actctgcata    360
taaattattg caaaattcat tcttatctct ctgaaagata tgcattttaa gggtaaaaag    420
aattcacaaa atattgantc cttaacaaat gtcaattagt atatggagag agctaaagga    480
cttcntgtag actggtncat tggggaaaaa caga                                514
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<210> 742
<211> 439
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(439)
<223> n = A,T,C or G

<400> 742
gcaggtccta tgcatagtta ataagggnta taatctactc aacatggaaa atgggagcct 60
atttgcaaac acacgagtaa ttaaagtacc aattctctct tagtttcttt ttttatagtt 120
ggnttatttt gcaattataa atgntaaaca tccctagaga tgaaagttaa aatggctgat 180
cacagatcag tagcaaaata caaattgaca attcaaaatt ataaataaaa ctctgttgag 240
gatgtttaac tttgagcctc caaatttaag agctaagctt ggaagaaaca aatttatagg 300
ttatatttcc ctcttaaatt aaaaaacaaa cttcctctgg cagtagnttg tgaattcctt 360
tcattgnaat gataccatga ttacaggatc aaaaatgctt aacttacttg ccattctgct 420
cacatcatca cagttgttt 439

<210> 743
<211> 275
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(275)
<223> n = A,T,C or G

<400> 743
cangacgcta cttcccctat catagaagag cttatcacct ttcatgatca cgccctcata 60
gtcattttcc ttatctgctc cctagtcctg tatgcccttt tcctaacact cacaacaaaa 120
ctaactaata ctaacatctc agacgctcag gaaatagaaa ccgtctgaac tatcctgccc 180
gccatcatcc tagtcctcat cgccctccca tccctacgca tcctttacat aacagacgag 240
gtcaacgatc cctcccttac catcaaatca attgg 275

<210> 744
<211> 295
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(295)
<223> n = A,T,C or G

<400> 744
ctgtnctttt aaaaaatctg gatgtttttt atttagtgat tgttcgacaa ttagctgctt 60
caaaacataa tgtgcattgc ttatgaatgc cttcatatac taatacagat actctgataa 120
tattacactc taataaggat aatgctgaat tttgaaagga cacaaaacat ctaatgccaa 180
tatatacatg attagccaac atctttgcta tcaagaccac tcgtttttaa ataaagatgc 240
aagtgtcagt tgtagattat tgggatgaag ctaaatcccc agaatgcagc agcag 295

<210> 745
<211> 477
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(477)
<223> n = A,T,C or G

<400> 745
cgcgttactg tacatattgc tagcaggaga caactggaaa tactaaacaa atactggaat 60
tcacattaca gacagacgaa accaacatgg atgccacaca taacttcctt tgtagtttca 120
cagagagcct atttgtggtt gctcaggtgg ggtcatacat tgcttgcaga aatggcctga 180
tcatagctct atgaaacaat gaattcggaa tgaaatctta ccatgacacc tctctgtagg 240
aaagaaatgt tgcttcacgt gtgctaagtt gagataataa tatttcacat atttatatac 300
agagaatcac tctcaaattt aacccaagat aagcaatagg atttgggggt gacttgtaca 360
catttctaac aacacttttc ttttttctag aggtcactct caaacactga tatatcacta 420
tagtttgagt gtanggattc agtaatcaaa ggttgttatt gcaaaagagc caggcag 477

<210> 746
<211> 524
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(524)
<223> n = A,T,C or G

<400> 746
ctgtgaaatt gggttgggag agccaaaata ctttacaact tcagaccgga gaaaaggcca 60
gaggtgtgaa gttagactct atgatgaaac agagtcgtct tttgcgatga catgttggga 120
taatgaatcc attctacttg cacagagctg gatgccacga gaaacagtaa tatttgcctc 180
agatgtaaga ataaattttg acaaatttcg gaactgcatg acagcaactg taatctcaaa 240
aaccattatt acaactaatc cagatatacc agaagctaac attctgctga attttatacg 300
agaaaataaa gaaacaaatg ttctggatga tgaaattgac agttatttca aagaatccat 360
aaatttaagt acaatagttg atgtctacac agntgaacaa ttaaagggaa aagctttgaa 420
gaatgaagga aaagctgatc cttcctatgg catcctttat gcctacattt ccacactcaa 480
cattgatgat gaaactcaaa agtagttcga aatagatgtt ccag 524

<210> 747
<211> 456
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(456)
<223> n = A,T,C or G

<400> 747
cctcagttct tgattgtggt tgacggggcg tcaccatgaa ggagcccatt tagtataaag 60
cttccaacct tttctcttaa tcgtttcttt aatcttttaa accatcttca agtgcatagg 120
ggagtttccg atgccagagg atgaaagcaa gtgctttctc caccctctcc tcccagagtg 180
aaaacaaatc cttttgctga tacttgtttc aaaagcatcc attgtaaagc ttctcagtga 240
cacaaaatac tgagaggtaa ctttttatca atcaaaccac ataccccaat ttaacacctt 300
tcagtgctct gaattcaact gacagactaa agggtgtttc ctgtaacagt ctgaaatatt 360
aagtgttttt tttgttttgt ttttaaatct tatttcagaa aacttcctct nggggtagga 420
aagtacacat gaagcagcaa agtaacgaag aaaaac 456

<210> 748
<211> 474

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(474)
<223> n = A,T,C or G

<400> 748
ccanaccagg gaaccaaatg cagacagnga agttctctgc ttcttttggc tataatgnga 60
caagaaaggg atcatctttt gaagatgttt aaagaaataa agcaactttc tttataaaca 120
gtcaaataat caattaatgg aataaataag tactaaccca cattttaacc actctgtaat 180
cactacactt tacatatttt ttatttnggn ggcaaantcc cccataatta gtctaaaatc 240
caccaatcac ttttaaaagt aaaatgaata gccaccaaaa taagaaaatc ttctgttcac 300
tctttggcta aaaaggaaaa caaataaaac aaaacaaaaa gaaacagaag acaactgtaa 360
cactggtgat aaaagaaact tttttttac aagtaaaata aagttatcaa tttaaatctt 420
ggncacttta taaaaacaag aggtaatgtt gtaataaaac agcagtagcc tcag 474

<210> 749
<211> 355
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(355)
<223> n = A,T,C or G

<400> 749
cctgggtnna gnggctgact gnaacctcca cttcctgttc tcaggcaatc ctcctgcctc 60
agcctcctta gtagctggga ctacaggagt gtgcaaccat gcccaactaa tttttgtatt 120
tttaatagag acagggtttc accatgttga tcaggttggt ctccaactcc tgacctcagg 180
tgatccacct gtcccagcct cccaaagtgc tgggattaca ggcatgagcc accacgcccg 240
gnccaggata aagtaaaaat ttgtaagcac acaaggccct ttgcaacctg gctcctggtt 300
actactttaa ncctcctgcc ctcccaaatg tnctcactgt ttttctanac atacc 355

<210> 750
<211> 493
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(493)
<223> n = A,T,C or G

<400> 750
ccatgctggt ctcgaactcc tgaactcagg tgatccaccc gcctcagtct cccaatagat 60
tacatatatt attaatgaat tgcttccttt aacaccctat tcattgaatt ttccagtaaa 120
ccacaattac taattactcc tgaaatcaga aaagaggtta aaaagatttt ataacagtat 180
cctatgaaat ctactacttt caagtaatag tagttgaatt accaaaaccc gtcactcaag 240
ccaatgacta caattaagat atgagtaaca tttcctagat aaataaagtc aattaattat 300
atttgcatct gggaaataga gaaagtacat ataagccatg attttgaagn caaaagagag 360
agantatttg ccaaggaggg gtgagttata gtatgtaatt ataacataca gaagcttttt 420

gtatgctggt aactaatttt aatttcctac attnttatgg agatttctgc tattcttgtc 480
ctattttcca cct 493

<210> 751
<211> 364
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(364)
<223> n = A,T,C or G

<400> 751
cgaggtctgg naaggtcacc aagtctgccc aganagctca gaaggctaaa tgaatattat 60
ccctaatacc tgccacccca ctcttaatca gtggtggaag aacggtctca gaactgtttg 120
tttcaattgg ccatttaagt ttagtagtaa aagactggtt aatgataaca atgcatcgta 180
aaaccttcag aaggaaagga gaatgttttg nggaccactt tggttttctt ttttgcgtgt 240
ggcagtttta agttattagt ttttaaaatc agtacttttt aatggaaaca acttgaccaa 300
aaatttgtca cagaattttg agacccatta aaaaagttaa atgagataaa aaaaaaaaan 360
cntg 364

<210> 752
<211> 498
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(498)
<223> n = A,T,C or G

<400> 752
ctggattatg ggttggnatt ggtcatatgt tagactccat acaggcatag ctatgatgca 60
gtgaatccct tagaagttac aattctcaaa ttacatactt cctcagatgt aacattagaa 120
ctcaatattt ctaacaataa cataccagaa aaggctggac tggcactcat ctgctgacta 180
acttgtagcc tcagtaatat gacatacttg cctttaacaa attatctcaa attaactaac 240
agaccttcag aaaatggaga ttctttttga tggggacata atcaaattta agtctgagaa 300
atatgcttaa cagttggaac tcaaattaaa tgtactgatt ttaaagttta gacattaaca 360
agtgatanat tagcctcaaa aaaagacaat ttggnaaggn ttaggtcttt taatttggtg 420
cttgntcaca acttgactgg tgcttctttc cttgctgctt cacatcaagc atggggccaa 480
ttctattttc agtaaatg 498

<210> 753
<211> 467
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(467)
<223> n = A,T,C or G

<400> 753

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nacaacctta gccanaacca tttacccaaa taaagggata ggcgatagaa attgaaacct      60
ggcgcaatag atatagnacc gcaagggaaa gatgaaaaat tataaccaag cataatatag     120
caaggactaa cccctatacc ttctgcataa tgaattaact agaaataact ttgcaaggag     180
agccaaagct aagacccccg aaaccagacg agctatctaa gaacagctaa aagagcacac     240
ccgtctatgt agcaaaatag tgggaagatt tataggtaga ggcgacaaac ctaccgagcc     300
tggtgatagc tggntgncca agatagaatc ttagntcaac tttaaatttg cccacagaac     360
cctctaaatc cccttgtaaa tttaactgtt agtccaaaga ggaacagctc ttggacacna     420
ggaaaaaacc ttgcagagag agtaaaaaat ttaacaccca tagtagg                   467
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<210> 754
<211> 196
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(196)
<223> n = A,T,C or G

<400> 754
gtcatgttca agtgttntaa tctgacgcag gcttatgcgg aggagaatgt tttcatgtta      60
cttatactaa cattagttct tctatagggt gatagattgg tccaattggg tgtgaggagt     120
tcagttatat gtttgggatt ttttaggcag tgggtgttga gcttgaacgc tttcttaatt     180
ggtggctgct tttagg                                                     196

<210> 755
<211> 381
<212> DNA
<213> Homo sapien

<400> 755
ctggaaagga ttctgtacat ataagacatc aaatattgag ggatactgga acttttaaat      60
taatgggcaa agaaagtcaa caaaggaagt tcatatgaaa tcaaactagt aatatgatta     120
caaaaaaaaa gtttaaaatt tttcttggcc ccagtcttat catttctgag ccaaatacaa     180
ttctatcgaa atcacctgaa actgaaatca ccattctagg ctggttttcc cataaagatg     240
gactgctcca aaaagaggaa tcaagaaaga atttggctca cagtgaatta ttcactttgt     300
cttagttaac taaaaataaa atctgactgt taactacaga aatcatttca aattctgtgg     360
tgataataaa gtaatgaccg c                                               381

<210> 756
<211> 341
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(341)
<223> n = A,T,C or G

<400> 756
ggntataaac ctattattta ttgcagaact aataaaaaat ccaaagcctt gtatttgtac      60
atctttatta tctctaaagc actttcctca acctaatttc agtttttaca attggtactc     120
aagaaaatag agacagaaat catttgattt tgcccagaaa ccatctgctt atatttataa     180
ggccacctaa tttgaaatca catatagacc aggcgcggtg gctcacgcct gtaattccaa     240
```

cactttggaa ggccaaggca ggtggatcac aaggtcaaga gattgagacc atcttggcca 300
acatggcgaa accccgtctc taccaaaaat acaaaaatca g 341

<210> 757
<211> 479
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

<400> 757
cgcnttactg tacatattgc tagcagggag acaactggaa atactaaaca aatactggaa 60
ttcacattac agacagacga aaccaacatg gatgccacac ataacttcct ttgtagtttc 120
acagagagcc tatttgtggt tgctcaggtg gggtcataca ttgcttgcag aaatggcctg 180
atcatagctc tatgaaacaa tgaattcgga atgaaatctt accatgacac ctctctgtag 240
gaaagaaatg ttgcttcacg tgtgctaagt tgagataata atatttcaca tatttatata 300
cagagaatca ctctcaaatt taacccaaga taagcaatag gatttggggg tgacttgtnc 360
acatttctaa caacactttt ctttttteta gaggtcactc tcaaacactg atatatcact 420
atagnttgag ngtagggatt caagtaatca aaggttgtta ttgcaaaaga gccaggcag 479

<210> 758
<211> 267
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(267)
<223> n = A,T,C or G

<400> 758
ccatgnctag gtttatagat agttgggtgg gttggtgtaa atgagtgagg caggagtccg 60
aggaggttag ttgtggcaat aaaaatgatt aaggatacta gtataagaga tcaggttcgt 120
cctttagtgt tgtgtatggc tatcatttgt tttgaggtta gtttgactag tcattgttgg 180
gtggtaatta gtcggttgtt gatgagatat ttggaggtgg ggatcaatag agggggaaat 240
agaatgatca gtactgcggc gggtagg 267

<210> 759
<211> 449
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(449)
<223> n = A,T,C or G

<400> 759
cgaggtcttg aaatcagcaa cacacttaca aatgagaaaa tgaaaataga agagtatata 60
aagaaaggga aagaggatta tgaagagagt catcagagag ctgtggctgc agaggtatcc 120
gtacttgaaa actggaagga gagtgaagtg tataagctac agatcatgga gtcacaagca 180

gaagcctttc tgaagaagct ggggctgatt agccgtgatc ctgcagcata tcccgacatg 240
gagtctgata tacgttcatg ggaattgttt ctttctaatg ttacaaaaga aattgagaaa 300
gcaaagtctc agtttgaaga acaaattaag gcaattaaaa atggttcccg gctcagtgaa 360
ctttctaaag ngcagatttc tgagctttca tttcctgcct gtaacacggt tcatcccgag 420
ttactccctg agtcttcagg ccacgatgg 449

<210> 760
<211> 414
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(414)
<223> n = A,T,C or G

<400> 760
ccatnaactg gaagcagctc actaaacaaa cagnggcata cccatagaac tgcatacttc 60
tcagcagtat gaaagaatga gctacttata taagcatcat tgataaacct caaaaaaaaa 120
atgccacatg aagaanccca agggggagaa acataaaaac tttatatgnc agncatataa 180
aattctagaa aatgcaaact aatccatcnt aaaggaaagt aaatcancag ttgtctggag 240
gaccanagag agcaggagga gagagattnt taangggtt aaagtaaatt ngggagtgcc 300
cttccatttt taaatnctat gaaaatgaaa gtaaaggccc ntgcatgttg taaactaata 360
gtaacaaaca gattgggttg gagtggggtg ttgtctgggg acatcattac aaan 414

<210> 761
<211> 428
<212> DNA
<213> Homo sapien

<400> 761
gagcctcact aaaataacag atttcagtat agccaagttc atcagaaaga ctcaaatgga 60
atgatttaca agatagaaca ctttaaacca ggtcagtcct atctttttgt agctgaaggc 120
tatcagtcat aacacaattt cgcgtacacc tctgctcatt atggaattac acttaaaacg 180
aatctcaaga gggtgaccat tgttgtttca gataccatcc ctaaggagag tggttaacag 240
gaagattgcc agtgttactg atggaaagaa gtgtttgttt gtttttttc ttgtcaaaga 300
cttacaccat agttttaaat taaactgtca ggcattttct cagacaggtt ttcctttca 360
atgcagtaat gaagaactaa gataaaaatc atgacttttg actgccactc aacattatta 420
catgcacc 428

<210> 762
<211> 574
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(574)
<223> n = A,T,C or G

<400> 762
caggtctgaa ctgataagta ttaagagacg tttgttgcta gttaagngtt ccagttgaga 60
gttcgaagtg aaaacctggg ctctttacca gtgttgagtg agaagattta tttctctttc 120
ctctgaattt accacatgta acatcacaga gacatgtaga gttcctttag gatttgcgat 180

ttgaaccagn ccagtctgat tttcaggtga attctgtgaa gagcttgatg ggggaagtct 240
gaagacagaa ggaattaggg aaaagggtga tacttacaga gtaaaggaaa taaatgaaaa 300
gataatggta tttttggtag ccacagggaa atagcaggag gggactggag atcacacaca 360
cgcacacgca cacacacaaa cacacacaca cgctaaaact caaactaaaa acctcccaaa 420
ggagctgctt tgtttgcaga cttcaattng aagtagatac taagggcaag aatagaccag 480
ttaaaattca cctgaaaatc tcttcccann cttcaaatgt gctaaaatat cactgtcagc 540
ttagcatctc tncatgtatg tatatataga tgta 574

<210> 763
<211> 465
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(465)
<223> n = A,T,C or G

<400> 763
cctactatgg gtgttaaaat tttttactct ctctacaagg ntttttccta gtgtccaaag 60
agctgttcct ctttggacta acagttaaat ttacaagggg atttagaggg ttctgngggc 120
aaatttaaag ttgaactaag attctatctt ggacaaccag ctatcaccag gctcggtagg 180
tttgtcgcct ctacctataa atcttcccac tattttgcta catagacggg tgtgctcttt 240
tagctgttct taggtagctc gtctggtttc ggggtctta gctttggctc tccttgcaaa 300
gttatttcta gttaattcat tatgcagaag gtataggggt tagtccttgc tatattatgc 360
ttggatataa tttttcatct ttcccttgcg gtactatatc tattgcgcca ngtttcaatt 420
tctatcgcct atactttatt tgggtaaatg gtttggctaa ggttg 465

<210> 764
<211> 151
<212> DNA
<213> Homo sapien

<400> 764
ctgtcaatta atgctagtcc tcaggattta aaaaataatc ttaactcaaa gtccaatgca 60
aaaacattaa gttggtaatt actcttgatc ttgaattact tccgttacga aagtccttca 120
catttttcaa actaagctac tatatttaag g 151

<210> 765
<211> 251
<212> DNA
<213> Homo sapien

<400> 765
gaagagctta tcacctttca tgatcacgcc ctcatagtca ttttccttat ctgcttccta 60
gtcctgtatg cccttttcct aacactcaca acaaaactaa ctaatactaa catctcagac 120
gctcaggaaa tagtaaccgt ctgaactatc ctgcccgcca tcatcctagt cctcatcgcc 180
ctcccatccc tacgcatcct ttacataaca gacgaggtca acgatccctc ccttaccatc 240
aaatcaattg g 251

<210> 766
<211> 375
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(375)
<223> n = A,T,C or G

<400> 766
cgaggtctgn cctcctggtt cttcatccat tattaacaga agagcatact ggtttcggtc 60
cataaaatct ttgggaaggg acaactgtaa aggaagttca tagtcgtcaa tatgaaggat 120
tttaatttct ggctttccta tcttcttctt caggatagct tccttcagca tagaattgtt 180
ttccaatata aaatattttg ctgggttgtc cgtactatgt aggctgacca ctgggaccct 240
tggaccttca cagaataata agaaatgttg attcatggga ctaaaactgg catcaaaata 300
tgtacattgt tctttcatga aattacatga aatgcattgg cgattcaata atccttcagt 360
agaagcactg tacag 375

<210> 767
<211> 485
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(485)
<223> n = A,T,C or G

<400> 767
cgaggtctga accctcgtgg agccattcat acaggtccct aattaaggaa caagtgatta 60
tgctaccttn gcacggttag ggtaccgcgg cccgttaaac atgtgtcact gggcaggcgg 120
tgcctctaat actggtgatg ctagaggtga tgtttttggn aaacaggcgg ggtaagattt 180
gccgagttcc ttttactttt tttaaccttt ccttatgagc atgcctgtgt tgggttgaca 240
gtgagggtaa taatgacttg ttggtgattg tagatattgg gctgttaatt gtcagttcag 300
tgttttaatc tgacgcaggc ttatgcggag gagaatgttt tcatgttact tatactaaca 360
ttagttcttc tatagggtga tagatnggtc caattgggtg tgaggagntc acttatatgt 420
ttgggatttt ttaggtaagn gggtgttgag cttgaacgct ttcttaattg gggctgctt 480
ttang 485

<210> 768
<211> 379
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(379)
<223> n = A,T,C or G

<400> 768
ctgatattct attaaagata caaagaggag ctggnaccat ttcttctgaa actattacaa 60
acaactgaaa aggtggaatt tctccctaat tcattttagg aggccagcat tatactgata 120
ccaaaacctg gcagaggtac aataataaaa ggaaacttca agtcagtatc actgatgaac 180
accaatgtga aaatcctcaa taaaatactg gcaaactgaa ttcagcagca catcaaaaag 240
ctaatccacc acaatcaagt cagcttcatc cctgcgatgc aagtctggtt caacatatgc 300
aaatcaataa atacaattca tcagataaac agagctaaag acaaaattca catgatttc 360
tcaatagatg cagaaaagg 379

<210> 769
<211> 518
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(518)
<223> n = A,T,C or G

<400> 769
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gaggctttat tgtttgtgaa aacatgttgt catcactttt tgctttaagc ccttggtggt 180
gaaataactc aaaccattct tccttatgct gaagatcgag aaccccaagt atcacatcta 240
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aagttagagt tcttgcatat acatatgaaa aggcatgtta cttgtgcttt caaagagctt 360
tttgcttggt gtaaaaagaa aactcaaatt acagtgtgat gtggaatata atggtggtag 420
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<210> 770
<211> 378
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(378)
<223> n = A,T,C or G

<400> 770
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agaataagag ttaagaagaa aaagactatg agaaaggaag tgntgacccc atttgcattt 180
aaatggcagg aatagtctca atctactcat tggggaaaaa tgtatgttgc atatttttga 240
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ctgaattggc aagaaaaatg gctggagggc tggaagaagn tggacccttc ttccttcttc 360
cttcttcctt ctttctcc 378

<210> 771
<211> 207
<212> DNA
<213> Homo sapien

<400> 771
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cctcatatcc tccctactat gcctagaagg aataatacta tcactgttca ttatagctac 120
tctcataacc ctcaacaccc actccctctt agccaatatt gtgcctattg ccatactagt 180
ctttgccgcc tgcgaagcag cggtagg 207

<210> 772
<211> 384

<212> DNA
<213> Homo sapien

<220>
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<222> (1)...(384)
<223> n = A,T,C or G

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ttatttctag ttaattcatt atgcagaagg tataggggtt agtccttgct atattatgct 360
tggttataat ttttcatctt tccc 384

<210> 773
<211> 182
<212> DNA
<213> Homo sapien

<400> 773
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gg 182

<210> 774
<211> 191
<212> DNA
<213> Homo sapien

<400> 774
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cctttagtgt tgtgtatggc tatcatttgt tttgaggtta gtttgattag tcattgttgg 180
gtggtaatta g 191

<210> 775
<211> 192
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(192)
<223> n = A,T,C or G

<400> 775
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cctttacatg ttgngtatgg ctatcatttg ttttgaggct agnttgatta gtcattgttg 180
ggtggtaatt aa 192

<210> 776
<211> 144
<212> DNA
<213> Homo sapien

<400> 776
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ggtctgttct ctcccattac acataggttt gtctcagcat gcaagagttt ttcctttaaa 120
aaaaaaaaaa aaaaaaaaaa aaaa 144

<210> 777
<211> 483
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(483)
<223> n = A,T,C or G

<400> 777
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tctgccgcct atactttatt tgggtaaatg gtttggctaa ngttgctggt agaaggtgga 480
gtg 483

<210> 778
<211> 393
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(393)
<223> n = A,T,C or G

<400> 778
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atttcccaac agagatactt ctggtcttac tgcacagtct tttaagagaa atacttccat 180
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ctctgaagta cttgagctac tttagtatgt ccagcctatt gctttttgtt ttagngngtc 300
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agcttgtggn ataaaacaat agtcaagatc cag 393

<210> 779
<211> 277
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(277)
<223> n = A,T,C or G

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ctatttcctg agcgtctgag atgttagtat tagttagttt tgttgtgagt gttaggaaaa 180
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tgataagctc ttctatgata ggggaagtag cgtcttg 277

<210> 780
<211> 328
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

<400> 780
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tctctgtgct tcgggaagct aancaaac 328

<210> 781
<211> 305
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(305)
<223> n = A,T,C or G

<400> 781
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cacaaggctg ccaagtgcct gtttttctag aactaggagt tggtgaggtt tggctantgc 240
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gacag 305

<210> 782
<211> 497
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(497)
<223> n = A,T,C or G

<400> 782
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<210> 783
<211> 364
<212> PRT
<213> Homo sapien

<400> 783
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Asn Thr Gln Arg Lys Lys Ser Gln Glu Lys Met Arg Glu Val Thr Asp
35 40 45
Ser Pro Gly Arg Pro Arg Glu Leu Thr Ile Pro Gln Thr Ser Ser His
50 55 60
Gly Ala Asn Arg Phe Val Pro Lys Ser Lys Ala Leu Glu Ala Val Lys
65 70 75 80
Leu Ala Ile Glu Ala Gly Phe His His Ile Asp Ser Ala His Val Tyr
85 90 95
Asn Asn Glu Glu Gln Val Gly Leu Ala Ile Arg Ser Lys Ile Ala Asp
100 105 110
Gly Ser Val Lys Arg Glu Asp Ile Phe Tyr Thr Ser Lys Leu Trp Ser
115 120 125
Asn Ser His Arg Pro Glu Leu Val Arg Pro Ala Leu Glu Arg Ser Leu
130 135 140
Lys Asn Leu Gln Leu Asp Tyr Val Asp Leu Tyr Leu Ile His Phe Pro
145 150 155 160
Val Ser Val Lys Pro Gly Glu Glu Val Ile Pro Lys Asp Glu Asn Gly
165 170 175
Lys Ile Leu Phe Asp Thr Val Asp Leu Cys Ala Thr Trp Glu Ala Met
180 185 190
Glu Lys Cys Lys Asp Ala Gly Leu Ala Lys Ser Ile Gly Val Ser Asn
195 200 205
Phe Asn His Arg Leu Leu Glu Met Ile Leu Asn Lys Pro Gly Leu Lys
210 215 220
Tyr Lys Pro Val Cys Asn Gln Val Glu Cys His Pro Tyr Phe Asn Gln
225 230 235 240
Arg Lys Leu Leu Asp Phe Cys Lys Ser Lys Asp Ile Val Leu Val Ala

245 250 255
Tyr Ser Ala Leu Gly Ser His Arg Glu Glu Pro Trp Val Asp Pro Asn
260 265 270
Ser Pro Val Leu Leu Glu Asp Pro Val Leu Cys Ala Leu Ala Lys Lys
275 280 285
His Lys Arg Thr Pro Ala Leu Ile Ala Leu Arg Tyr Gln Leu Gln Arg
290 295 300
Gly Val Val Val Leu Ala Lys Ser Tyr Asn Glu Gln Arg Ile Arg Gln
305 310 315 320
Asn Val Gln Val Phe Glu Phe Gln Leu Thr Ser Glu Glu Met Lys Ala
325 330 335
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340 345 350
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355 360

<210> 784
<211> 6353
<212> DNA
<213> Homo sapien

<400> 784
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<210> 785
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<212> DNA
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<210> 786
<211> 108
<212> PRT
<213> Homo sapiens

<400> 786
Arg Arg Ser Cys Glu Pro Ala Thr Arg Val Pro Glu Val Trp Ile Leu
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Ser Pro Leu Leu Arg His Gly Gly His Thr Gln Thr Gln Asn His Thr
            20                  25                  30
Ala Ser Pro Arg Ser Pro Val Met Glu Ser Pro Lys Lys Lys Asn Gln
        35                  40                  45
Gln Leu Lys Val Gly Ile Leu His Leu Gly Ser Arg Gln Lys Lys Ile
    50                  55                  60
Arg Ile Gln Leu Arg Ser Gln Val Leu Gly Arg Glu Met Arg Asp Met
65                  70                  75                  80
Glu Gly Asp Leu Gln Glu Leu His Gln Ser Asn Thr Gly Asp Lys Ser
                85                  90                  95
Gly Phe Gly Phe Arg Arg Gln Gly Glu Asp Asn Thr
            100                 105
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<210> 787
<211> 152
<212> PRT
<213> Homo sapiens

<400> 787
Arg Pro Lys Glu Glu Val Pro Arg Ser Lys Ala Leu Glu Val Thr Lys
                5                   10                  15
Leu Ala Ile Glu Ala Gly Phe Arg His Ile Asp Ser Ala His Leu Tyr
            20                  25                  30
Asn Asn Glu Glu Gln Val Gly Leu Ala Ile Arg Ser Lys Ile Ala Asp
        35                  40                  45
Gly Ser Val Lys Arg Glu Asp Ile Phe Tyr Thr Ser Lys Leu Trp Ser
    50                  55                  60
Thr Phe His Arg Pro Glu Leu Val Arg Pro Ala Leu Glu Asn Ser Leu
65                  70                  75                  80
Lys Lys Ala Gln Leu Asp Tyr Val Asp Leu Tyr Leu Ile His Ser Pro
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85 90 95
Met Ser Leu Lys Pro Gly Glu Glu Leu Ser Pro Thr Asp Glu Asn Gly
100 105 110
Lys Val Ile Phe Asp Ile Val Asp Leu Cys Thr Thr Trp Glu Ala Met
115 120 125
Glu Lys Cys Lys Asp Ala Gly Leu Ala Lys Ser Ile Gly Val Ser Asn
130 135 140
Phe Asn Pro Gln Ala Ala Gly Asp
145 150

<210> 788
<211> 1633
<212> DNA
<213> Homo sapiens

<400> 788
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ccctataaat gtg 1633

<210> 789
<211> 200
<212> PRT
<213> Homo sapien

<400> 789
Met Ala Lys Gly Asp Pro Lys Lys Pro Lys Gly Lys Met Ser Ala Tyr
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Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys Asn Pro

20 25 30
Glu Val Pro Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45
Trp Lys Thr Met Ser Gly Lys Glu Lys Ser Lys Phe Asp Glu Met Ala
50 55 60
Lys Ala Asp Lys Val Arg Tyr Asp Arg Glu Met Lys Asp Tyr Gly Pro
65 70 75 80
Ala Lys Gly Gly Lys Lys Lys Lys Asp Pro Asn Ala Pro Lys Arg Pro
85 90 95
Pro Ser Gly Phe Phe Leu Phe Cys Ser Glu Phe Arg Pro Lys Ile Lys
100 105 110
Ser Thr Asn Pro Gly Ile Ser Ile Gly Asp Val Ala Lys Lys Leu Gly
115 120 125
Glu Met Trp Asn Asn Leu Asn Asp Ser Glu Lys Gln Pro Tyr Ile Thr
130 135 140
Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Val Ala Asp Tyr
145 150 155 160
Lys Ser Lys Gly Lys Phe Asp Gly Ala Lys Gly Pro Ala Lys Val Ala
165 170 175
Arg Lys Lys Val Glu Glu Glu Asp Glu Glu Glu Glu Glu Glu Glu Glu
180 185 190
Glu Glu Glu Glu Glu Glu Asp Glu
195 200

<210> 790
<211> 457
<212> DNA
<213> Homo sapiens

<400> 790
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tcccaggagc ccagtaatgg agagccccaa aaagaagaac cagcagctga aagtcgggat 180
cctacacctg ggcagcagac agaagaagat caggatacag ctgagatccc agtgcgcgac 240
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tagatatttg acttaaacta tctcaataaa gttttgc 457

<210> 791
<211> 126
<212> PRT
<213> Homo sapiens

<400> 791
Ser Pro Val Leu Gly Thr Arg Arg Ser Cys Glu Pro Ala Thr Arg Val
5 10 15

Pro Glu Val Trp Ile Leu Ser Pro Leu Leu Arg His Gly Gly His Thr
20 25 30

Gln Thr Gln Asn His Thr Ala Ser Pro Arg Ser Pro Val Met Glu Ser
35 40 45

Pro Lys Lys Lys Asn Gln Gln Leu Lys Val Gly Ile Leu His Leu Gly
50 55 60

Ser Arg Gln Lys Lys Ile Arg Ile Gln Leu Arg Ser Gln Cys Ala Thr
65 70 75 80

Trp Lys Val Ile Cys Lys Ser Cys Ile Ser Gln Thr Pro Gly Ile Asn
85 90 95

Leu Asp Leu Gly Ser Gly Val Lys Val Lys Ile Ile Pro Lys Glu Glu
100 105 110

His Cys Lys Met Pro Glu Ala Gly Glu Glu Gln Pro Gln Val
115 120 125

<210> 792
<211> 461
<212> DNA
<213> Homo sapiens

<400> 792
cggcggagct gtgagccggc gactcgggtc cctgaggtct ggattctttc tccgctactg 60
agacacggcg gacacacaca aacacagaac cacacagcca gtcccaggag cccagtaatg 120
gagagcccca aaaagaagaa ccagcagctg aaagtcggga tcctacacct gggcagcaga 180
cagaagaaga tcaggataca gctgagatcc caggtgctgg gaagggaaat gcgcgacatg 240
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cggcgtcaag gtgaagataa tacctaaaga ggaacactgt aaaatgccag aagcaggtga 360
agagcaacca caagtttaaa tgaagacaag ctgaaacaac gcaagctggt tttatattag 420
atatttgact taaactatct caataaagtt ttgcagcttt c 461

<210> 793
<211> 108
<212> PRT
<213> Homo sapiens

<400> 793
Arg Arg Ser Cys Glu Pro Ala Thr Arg Val Pro Glu Val Trp Ile Leu
5 10 15

Ser Pro Leu Leu Arg His Gly Gly His Thr Gln Thr Gln Asn His Thr
20 25 30

Ala Ser Pro Arg Ser Pro Val Met Glu Ser Pro Lys Lys Lys Asn Gln
35 40 45

Gln Leu Lys Val Gly Ile Leu His Leu Gly Ser Arg Gln Lys Lys Ile
50 55 60

Arg Ile Gln Leu Arg Ser Gln Val Leu Gly Arg Glu Met Arg Asp Met
65 70 75 80

Glu Gly Asp Leu Gln Glu Leu His Gln Ser Asn Thr Gly Asp Lys Ser

85 90 95

Gly Phe Gly Phe Arg Arg Gln Gly Glu Asp Asn Thr
100 105

<210> 794
<211> 970
<212> DNA
<213> Homo sapiens

<400> 794
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gcaaatatca cagtgttaga tgaactttct ggttgacacc tgacaggaag agcctctgta 420
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cagtgtgaag agagaagaca tattctacac ttcaaagctt tggtccactt ttcatcgacc 720
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agctggagat 970

<210> 795
<211> 152
<212> PRT
<213> Homo sapiens

<400> 795
Arg Pro Lys Glu Glu Val Pro Arg Ser Lys Ala Leu Glu Val Thr Lys
5 10 15

Leu Ala Ile Glu Ala Gly Phe Arg His Ile Asp Ser Ala His Leu Tyr
20 25 30

Asn Asn Glu Glu Gln Val Gly Leu Ala Ile Arg Ser Lys Ile Ala Asp
35 40 45

Gly Ser Val Lys Arg Glu Asp Ile Phe Tyr Thr Ser Lys Leu Trp Ser
50 55 60

Thr Phe His Arg Pro Glu Leu Val Arg Pro Ala Leu Glu Asn Ser Leu
65 70 75 80

Lys Lys Ala Gln Leu Asp Tyr Val Asp Leu Tyr Leu Ile His Ser Pro
85 90 95

Met Ser Leu Lys Pro Gly Glu Glu Leu Ser Pro Thr Asp Glu Asn Gly
            100   105   110

Lys Val Ile Phe Asp Ile Val Asp Leu Cys Thr Thr Trp Glu Ala Met
        115   120   125

Glu Lys Cys Lys Asp Ala Gly Leu Ala Lys Ser Ile Gly Val Ser Asn
    130   135   140

Phe Asn Pro Gln Ala Ala Gly Asp
145   150

<210> 796
<211> 2435
<212> DNA
<213> Homo sapiens

<400> 796
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Pro Pro Gly Arg Ala Glu Trp Tyr Gly Pro Ala Gly Val Lys Ala Gly
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Gly Arg Arg Arg Val Pro Arg Arg Arg Arg Arg Trp Gly Cys Val Gln
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Glu Glu Arg Trp Ala Gly Pro Ala Arg Val Gly Gly Arg Pro Arg Gly
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Pro Gly Arg Ala Ala Ala Arg Arg Ala Ala Ala Ser Thr Arg Ala Ala
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Ser Pro Arg Cys Thr Thr Cys Arg
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Arg Asn Ala Gly Gln Gly Arg Arg Gly Ser Gly Gly Ala Arg Gly Ala
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Arg Ala Glu Arg Arg Arg Ala Gly Arg Gln His Pro Leu Gly Pro His
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Arg Arg Gly Ala Gln Arg Ala Ala Glu Arg Ala His Pro Ala Ala Ala
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Val Arg Val Gly Pro Arg Gln Gly Ala Glu Pro Arg Gly His Asp Pro
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catttgaaaa aaataaa 4637

210> 805
<211> 394
<212> PRT
<213> Homo sapiens

<400> 805
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Arg Leu Met Asn Arg Asp Glu Asn Gly Gly Gly Ala Gly Gly Ser Gly
20 25 30

Ser His Gly Thr Leu Gly Leu Pro Ser Gly Gly Lys Cys Leu Leu Leu
35 40 45

Asp Cys Arg Pro Phe Leu Ala His Ser Ala Gly Tyr Ile Leu Gly Ser
50 55 60

Val Asn Val Arg Cys Asn Thr Ile Val Arg Arg Arg Ala Lys Gly Ser
65 70 75 80

Val Ser Leu Glu Gln Ile Leu Pro Ala Glu Glu Glu Val Arg Ala Arg

85 90 95

Leu Arg Ser Gly Leu Tyr Ser Ala Val Ile Val Tyr Asp Glu Arg Ser
100 105 110

Pro Arg Ala Glu Ser Leu Arg Glu Asp Ser Thr Val Ser Leu Val Val
115 120 125

Gln Ala Leu Arg Arg Asn Ala Glu Arg Thr Asp Ile Cys Leu Leu Lys
130 135 140

Gly Gly Tyr Glu Arg Phe Ser Ser Glu Tyr Pro Glu Phe Cys Ser Lys
145 150 155 160

Thr Lys Ala Leu Ala Ala Ile Pro Pro Pro Val Pro Pro Ser Ala Thr
165 170 175

Glu Pro Leu Asp Leu Asp Cys Ser Ser Cys Gly Thr Pro Leu His Asp
180 185 190

Gln Glu Gly Pro Val Glu Ile Leu Pro Phe Leu Tyr Leu Gly Ser Ala
195 200 205

Tyr His Ala Ala Arg Arg Asp Met Leu Asp Ala Leu Gly Ile Thr Ala
210 215 220

Leu Leu Asn Val Ser Ser Asp Cys Pro Asn His Phe Glu Gly His Tyr
225 230 235 240

Gln Tyr Lys Cys Ile Pro Val Glu Asp Asn His Lys Ala Asp Ile Ser
245 250 255

Ser Trp Phe Met Glu Ala Ile Glu Tyr Ile Asp Ala Val Lys Asp Cys
260 265 270

Arg Gly Arg Val Leu Val His Cys Gln Ala Gly Ile Ser Arg Ser Ala
275 280 285

Thr Ile Cys Leu Ala Tyr Leu Met Met Lys Lys Arg Val Arg Leu Glu
290 295 300

Glu Ala Phe Glu Phe Val Lys Gln Arg Arg Ser Ile Ile Ser Pro Asn
305 310 315 320

Phe Ser Phe Met Gly Gln Leu Leu Gln Phe Glu Ser Gln Val Leu Ala
325 330 335

Thr Ser Cys Ala Ala Glu Ala Ala Ser Pro Ser Gly Pro Leu Gly Glu
340 345 350

Arg Gly Lys Thr Pro Ala Thr Pro Thr Ser Gln Phe Val Phe Ser Phe
355 360 365

Pro Val Ser Val Gly Val His Ser Ala Pro Ser Ser Leu Pro Tyr Leu

370 375 380

His Ser Pro Ile Thr Thr Ser Pro Ser Cys
385 390

<210> 806
<211> 302
<212> PRT
<213> Homo sapiens

<400> 806
Val Arg Ala Arg Leu Arg Ser Gly Leu Tyr Ser Ala Val Ile Val Tyr
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20 25 30

Ser Leu Val Val Gln Ala Leu Arg Arg Asn Ala Glu Arg Thr Asp Ile
35 40 45

Cys Leu Leu Lys Gly Gly Tyr Glu Arg Phe Ser Ser Glu Tyr Pro Glu
50 55 60

Phe Cys Ser Lys Thr Lys Ala Leu Ala Ala Ile Pro Pro Pro Val Pro
65 70 75 80

Pro Ser Ala Thr Glu Pro Leu Asp Leu Gly Cys Ser Ser Cys Gly Thr
85 90 95

Pro Leu His Asp Gln Gly Gly Pro Val Glu Ile Leu Pro Phe Leu Tyr
100 105 110

Leu Gly Ser Ala Tyr His Ala Ala Arg Arg Asp Met Leu Asp Ala Leu
115 120 125

Gly Ile Thr Ala Leu Leu Asn Val Ser Ser Asp Cys Pro Asn His Phe
130 135 140

Glu Gly His Tyr Gln Tyr Lys Cys Ile Pro Val Glu Asp Asn His Lys
145 150 155 160

Ala Asp Ile Ser Ser Trp Phe Met Glu Ala Ile Glu Tyr Ile Asp Ala
165 170 175

Val Lys Asp Cys Arg Gly Arg Val Leu Val His Cys Gln Ala Gly Ile
180 185 190

Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Met Lys Lys Arg
195 200 205

Val Arg Leu Glu Glu Ala Phe Glu Phe Val Lys Gln Arg Arg Ser Ile
210 215 220

Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln Phe Glu Ser
225 230 235 240

Gln Val Leu Ala Thr Ser Cys Ala Ala Glu Ala Ala Ser Pro Ser Gly
245 250 255

Pro Leu Arg Glu Arg Gly Lys Thr Pro Ala Thr Pro Thr Ser Gln Phe
260 265 270

Val Phe Ser Phe Pro Val Ser Val Gly Val His Ser Ala Pro Ser Ser
275 280 285

Leu Pro Tyr Leu His Ser Pro Ile Thr Thr Ser Pro Ser Cys
290 295 300

<210> 807
<211> 3829
<212> DNA
<213> Homo sapiens

<400> 807
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aacccagccc tagccaacgc cgcatgagag ggagtgtgcc gagggcttct gagaaggttt 180
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catcaataca cagaggaaga agagtcagga aaagatgaga gaagttacag actctcctgg 360
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ttctgcacat gtttacaata atgaggagca ggttggactg gccatccgaa gcaagattgc 540
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tgttgacctc tatcttattc attttccagt gtctgtaaag ccaggtgagg aagtgatccc 720
aaaagatgaa aatggaaaaa tactatttga cacagtggat ctctgtgcca catgggaggc 780
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<210> 808
<211> 781
<212> DNA
<213> Homo sapiens

<400> 808
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gaagaggaac cagcaggctt ccggagggtt gtgtggtcag tgactcagag tgagaaggcc 180
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gccataacta gggaggaagg agggccgagg agtggagggg ctcaggcgaa gctggggtgc 300
tgttggggggt atccgagtcc cagaagcacc tggaaccccg acagaagatt ctggactccc 360
cagacgggac caggagaggg acggcatgag cgacacacac aaacacagaa ccacacagcc 420
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atcctacacc tgggcagcag acagaagaag atcaggatac agctgagatc ccagtgcgcg 540
acatggaagg tgatctgcaa gagctgcatc agtcaaacac cggggataaa tctggatttg 600
ggttccggcg tcaaggtgaa gataataccct aaagaggaac actgtaaaat gccagaagca 660
ggtgaagagc aaccacaagt ttaaatgaag acaagctgaa acaacgcaag ctggttttat 720
attagatatt tgacttaaac tatctcaata aagttttgca gctttcacca aaaaaaaaaa 780

a 781

<210> 809
<211> 160
<212> PRT
<213> Homo sapiens

<400> 809
Met Arg Cys His Ala His Gly Pro Ser Cys Leu Val Thr Ala Ile Thr
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Arg Glu Glu Gly Gly Pro Arg Ser Gly Gly Ala Gln Ala Lys Leu Gly
20 25 30

Cys Cys Trp Gly Tyr Pro Ser Pro Arg Ser Thr Trp Asn Pro Asp Arg
35 40 45

Arg Phe Trp Thr Pro Gln Thr Gly Pro Gly Glu Gly Arg His Glu Arg
50 55 60

His Thr Gln Thr Gln Asn His Thr Ala Ser Pro Arg Ser Pro Val Met
65 70 75 80

Glu Ser Pro Lys Lys Lys Asn Gln Gln Leu Lys Val Gly Ile Leu His
85 90 95

Leu Gly Ser Arg Gln Lys Lys Ile Arg Ile Gln Leu Arg Ser Gln Cys
100 105 110

Ala Thr Trp Lys Val Ile Cys Lys Ser Cys Ile Ser Gln Thr Pro Gly
115 120 125

Ile Asn Leu Asp Leu Gly Ser Gly Val Lys Val Lys Ile Ile Pro Lys
130 135 140

Glu Glu His Cys Lys Met Pro Glu Ala Gly Glu Glu Gln Pro Gln Val
145 150 155 160

<210> 810
<211> 624
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(624)
<223> n=A,T,C or G

<400> 810
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agcccctcat gatnggcacc gggacagtca cgaggaaggg ctccaccttc cggcccatgg 120
acacggatgc cgaggaggca ggggtgagca ccgatgccgg cggccactat gactgccccgc 180

agcgggccgg ccgccacgag tacgcgctgc ccctggcgcc cccggagccc gagtacgcca 240
cgcccatcgt ggagcggcac gtgctgcgcg cccacacgtt ctctgcgcag agcggctacc 300
gcgtcccagg gccccagccc ggccacaaac actccctctc ctcgggcggc ttctcccccg 360
tagcgggtgt gggcgcccag gacggagact atcaaaggcc acacagcgca cagcctgcgg 420
acaggggcta cgaccggccc aaagctgtca gcgccctcgc caccgaaagc ggacaccctg 480
actctcagaa gcccccaacg catcccggga caagtgacag ctattctgcc cccagagact 540
gcctcacacc cctcaaccag acggccatga ctgccctttt gtgaacacaa tgtgaaagaa 600
gcctgctgtg gtactgagcg tcgg 624

<210> 811
<211> 572
<212> DNA
<213> Homo sapiens

<400> 811
agcgggctgt gaggacgctc tgggccaggc tgcagcgcga gcgttccgag ctgctgggct 60
ctttcgagga tgttctgata cgcgcgtcgg cctgcctgga ggaggcggcc cgggagcgcg 120
acggcctgga gcaggcgctg cggaggcgcg agagcgagca cgagagggag gtgcgcgctc 180
tgtacgagga gacggagcag cttcgggagc agagccggcg cccgccgagt cagaacttcg 240
cccgcgggga gcggagaagc cgtctggagc tggagctgca gatccgcgag caggacctgg 300
aacgcgcggg cctgcggcag cgggagttag agcagcagct gcacgcccag gctgcggagc 360
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agctggaggg ggcgcaggag cagatccgca ggctggagag cgaagcacga ggccgccagg 480
agcaaaccca acgagacgtg gtcgccgtct ccaggaacat gcagaaagag aaagtcagcc 540
tgctacggca actggagctg ctcagggagc tg 572

<210> 812
<211> 594
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(594)
<223> n=A,T,C or G

<400> 812
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ttttgcgggc tgccgtacag cggcaagagc cggcgtgctg aagagttgcg cgtggcgctg 120
gctgccgagg gccgcgcggt gtacgtggtg gacgacgcag ctgtcctggg cgcagaggac 180
ccagcggtgt acggcgattc tgcccgtgag aaggcattgc gtggagctct gcgagcctcc 240
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cctggccgga acgtcagtgt gagttggcgg ccacgcgctg aggaggacgg gagagcccag 480
gcggcgggca gcagcgtcct cagggaactg catactgcgg actctgtagt aaatggaagt 540
gcccaggccg acgtacccaa ggaactggag cgagaagaat ccggggctgc ggag 594

<210> 813
<211> 561

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(561)
<223> n=A,T,C or G

<400> 813
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ncccattgac gtcctctctt ctgaaaactc cgtgtggccc tcgctctgca ctgtcatgag 180
gcggtgatgg agctagatac ccaccacgga caatgatcat cagtttgggg ttctctgggt 240
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ttaatccgaa atgtgttaan tcgancacat gggtccacgt ccaggacagc tcccatcgaa 480
ctctcnaggc tctctanctc agggatgaag gaggtnaagt gatcgatnct cacaagcgan 540
agctctcgcn cnatatctgc g 561

<210> 814
<211> 307
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(307)
<223> n=A,T,C or G

<400> 814
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ccnncgtgga aanggctggg nncgcggccg ntctngcaga agtatcccga tttttttttt 120
tttttttttt tttttggngg agggaaantt ncagacatag ctttattgct gactcctgcc 180
cccttcanag ccctagtcac aggcnncagg gntgttttgt aanttaaant ttcnggaaaa 240
tnggngtntt tntgcatnca anagaagggn tgccaaangn ggggtattgc ttctgggtgg 300
nttaccc 307

<210> 815
<211> 784
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(784)
<223> n=A,T,C or G

<400> 815
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ggacccacaa atgtggaaga tatgaatgca ctgttaatca aagatgctgt gtataatgct 120
gttggattaa gctgcttatg agctctttga cagtgttgat tttgatcagt ggtttaaaaa 180
ccagcttctt ccagaattac aagtcattca caataggtat aagccattgc gacgcagggt 240
gatttggctc atcggtcagt ggatttctgt gaaattcaag tctgacttaa gacccatgct 300

ttatgaagca atctgtaact tgcttcaaga tcaagattta gtggccgtat tgaaacagct 360
acaactttga agttaactgt tgatgatttt gaatttagaa cagatcagtt tctaccgtat 420
ttggaaacca tgttcacact actttttcag ttactgcagc aagttacaga atgtgacaca 480
aagatgcatg ttttgcatgt cctttcttgt gtgatcgaaa gagtcaacat gcagatacga 540
ccatatgtgg gatgtttggt acaatatttg cccctccttt ggaagcagaa gtgaanaaca 600
caatatgttg agatgtgcta ttttgaccac acttattcat cttggtcagg gattangagc 660
agacagcaag acctgtccct ttcctgctcc agttattcac tgagtaccag atgtttcaca 720
gccttcncat gtttattttt ctggaaaatg ggttaaaaat atnggtanga acctttggga 780
aaac 784

<210> 816
<211> 813
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(813)
<223> n=A,T,C or G

<400> 816
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agcagctgct gccagagccc tcttgtagct tctttatttt ctgtttcttt ccagctttcc 180
taccctccta tccccccttg tgtttgggcc acaattttga aataattttt attataggta 240
tgtgctgcca aagccagatt tttataaggt aaaataaatt aagaatttaa acagtaaaag 300
ccagtgtctc aaaatgtcag cattaaaatg tgaaggggac agcagggtgt gaaccggaaa 360
cacacattgc caaacagttg ccaactgaac tgctgcttct catggtccgt tcttttcttt 420
gcccttaagg tcaatgccag tgtccagacg agcagtgtag aaaagctccc tgtgtggttt 480
gtcgtgaggt ctgcttgtat ctcttcactg gcgttagttt cattagctct ttattctcct 540
tacgttcgag tgaatctgcc aagaacactg gtggatagta ttatcctaac acttttggtt 600
tgggggcggg gagggggcag ggaatagtga gctggcttta ccaccttcag gatctcgaat 660
tgggcgcttg aacctaagaa agattgtgga cttatcaaaa gtcaccgctc agtgttcgtc 720
aagcatgtat ttatgtgacn atcatactag ggaggggatg gttgggaatt cttccatgtg 780
caaatttngn cccgcaanaa gcaaaactgg ngt 813

<210> 817
<211> 229
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(229)
<223> n=A,T,C or G

<400> 817
gaaactttta cattaatgat ttattaaaan aaacaactcc ttgtcccact ccactgngct 60
gcttgtaatc tccatacatg gcctccattt tcaactgttt tnttggtcac anagctccaa 120
acanacacat tttttttcc aggtaaaagc tgtttttagt ttgtagtaca aatgtgactg 180
catccaatac tgacacattg ttcctttggc ccacagtccc antcaccac 229

<210> 818
<211> 781

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(781)
<223> n=A,T,C or G

<400> 818
ggcacgaggt gtgtgtgtgt gtgtgtgtgt aacacatggg cattggtcct tccaggacaa 60
cttggttagg gctccagggt ggcctctcag gcaggaacag gctttttttcc tcctgtcttt 120
tcctcacatc acgtcctgcc ccaggtcact gcataaataa gtgctttgga aagtattcat 180
ctagaaagta acataaatac tgtacataga aaagggttgc cgccccttag ccttcgcact 240
gccccagaga gctctccaca tattgcacac ggcctcccca gccctgtggg gtccaggcct 300
ggctgtgtct ttggtagaag cttcagggac agttcctggg cagcccccac atctncaccc 360
tgctcccaaa ggggagctct agggtagtca gtgggtacca gaagccttgc tcggcctcgc 420
tggtggcctt ctaccangga tgctttcaca aggatgagac agaatcccaa tggtatgccc 480
ctgcttggac actctgctca aggtctgcat gtggcctggg aggagacagg caggctgang 540
gcaggtggac aggtgantcc tggccacana aggcaggctc acacccttca cangaatagg 600
tggtttgngc tgtcatctcg gcccacggtc tcctnntgcg ccaccccccc ttnntgaatc 660
gnaantcctc aaanccctta ccaccacttg atgaccnanc atttttangg cctggcttga 720
aggnggggc cttnggcccc ccnaaggggg aaatnccccc ggnngaatnc ccaangggga 780
a 781

<210> 819
<211> 199
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(199)
<223> n=A,T,C or G

<400> 819
cnnngtggaa anggctgggn nngcggccgt tttcgnngta gtatcgcgnt tttttttttt 60
tttttgtggg aggttntgcn gtntttgntt gctctctcaa attccaggaa ttgacttatt 120
taattaatgc ctgcaacctg tgctagcaaa tatttgnaca aaacnanttg tgttggngat 180
gttcttttgg gtcgggcag 199

<210> 820
<211> 211
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(211)
<223> n=A,T,C or G

<400> 820
nnnggcacga ggagagagag agagagagag agagagagag agagagagag agagagagag 60
agagagagag agagagagag agagagagag agagagagag agagagagag agagagagag 120
agacagtnct ntgtgtgtct ctctgtctcn aagtacncnc tgaggnatct gntntctgtn 180

tntgngtaca cngtatctct cntggncata t 211

<210> 821
<211> 952
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(952)
<223> n=A,T,C or G

<400> 821
nnntcaggct cctggatgag ccctgcgana gagggtggca gcacggagag agctgctgga 60
ggcagcagag caccaaggaa acatccagac atgcgcggcc cggcccatcc gctcccggaa 120
cagcaccaag acgaaatggg aaactacatg tccccaggtt cgaggctgca ggggcagact 180
ctggtgtgaa cagggggat gtgaccacct aaggaaaagg tcacacctgt cttggtatca 240
ggggctcaag agctctcaaa aatgtaaggg gccgacagtc ccctgcccca ggcctgatca 300
caactccagg gtcatgaggt cagagtaaag tgcagaggtt tttaaacata accaaaattt 360
caggagaggc caattcttac ttgaaagagc aacaccctgg ggcgctgctt gccattactt 420
cctcatcttt agcaacacat ttgcttttca aggtgttcct tgtggaaaca cacatacaca 480
tagacacatg cccctcagat gtcccctgcc ccctgattag tagaatgtgg ggtttccaca 540
atgagcagaa actgatccaa ttttggttaa gtttgagaag ccctctgaat ttgggtggtt 600
ggcccaatgt aaatacttcc gcagagatgg agggcattca aaacaggttc tgaaaggatc 660
cagcctatct tggactttgt tctggaancc anggattcag cnttggccac ctgtgccagg 720
cttgcaaggc ctggtgtgaa cncccaaant ggcagcaaaa acaacanaca gccnctgcac 780
tttggntgga ccaacgtttg gcctnaacaa atctngcggg ttgggatntt cttgntttcn 840
cncccagggg accnaaaacc cccntacntg naataaccnt tttttttnn aaccntttan 900
ccantgggnt tnccnaaaaa acttgncccc tttttttnc caanggnaaa at 952

<210> 822
<211> 587
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(587)
<223> n=A,T,C or G

<400> 822
ggcacgagaa ctagtctcga gttttttttt ttttttttta acatttctga attttattat 60
ttttagggaa gacacgcagt ttcacaagaa acaatgattt ttctcaaaca atagaaaaaa 120
aggtcttttt gaaaaatcca ctgtcttaga tgaaaagtct acccagcaag cactggggca 180
gttctgagag tagaaaccag tgtggtggaa gttacttata ggaagttcag tgcagaggtc 240
tccacaagtc ctgattagtt ctgnaaggct ccattgggcc agctcagggt aacagtggga 300
atgagctcac agacaaaggc aggcaccagt tcctntgccc gggatgcagg ctggctcact 360
ccccangcgg ntgcatcttg cttcagactc atcaaactgc tgctgtccan ctncgncatg 420
actntgttga gaacatanaa ctctgctctc tggctttgct tcanctcctg gtgggcnnaa 480
ttctgcttag ccttctncac tntgaaggnt gggtctttaa cttttggatt tttttttccn 540
ggcaggggga accatgaatg ggtacatac ccacncnggg ntttggc 587

<210> 823
<211> 264

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(264)
<223> n=A,T,C or G

<400> 823
ntcnatncct actangncaa actgactccg ccctnagnca cctngtggtc canggctgcg 60
gagctgcgat acagccttcc gcgggtctgn tggaaccccg acctntcntg gtgtntntcc 120
ntcccncncc ccaacccgcc aagggcctgc ctttcctnct gggcctttgc cagcgntngg 180
ccanaccggg gccaaaccgg nccccgggca cattttaacc nagggcncnc ttntagaana 240
aaaccccggn tgatgttata aagg 264

<210> 824
<211> 520
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(520)
<223> n=A,T,C or G

<400> 824
tcaagcngcc cccantntga tggatatctg caaaattcnc cctttcaccg gccgcccgcn 60
gcatgtctta ttatacaaca natccaactt ccctaagngg ntcacacatn ntaaggtatt 120
gttaacaaaa taggaaantc tattngaact aacaatcatc tctttgaatc tgcntatccc 180
attaaaagca ttttcctcaa tattcctcat atcggttatg gncaatggat acccatctga 240
gctggttgan ccctttaaat tnattatact taactttttg aaggctgtta tacccaaggg 300
acaaacctaa ncaaccanca gatatacttg anggtntctc ctgtnatttc tcagattcca 360
atataccatt ttgccttnac acctacagcc cttaggggca tcctcnttcc ncanaacaaa 420
ncattntcac taagacagnc tggggtnntn caccaatggc taccaaacct ctgnccgcna 480
cccaccgcnt aaanggcnga aattnccnan ccacacgggt 520

<210> 825
<211> 2064
<212> DNA
<213> Homo sapiens

<400> 825
cggtgcgctg agcgccggag gagcgtaggc agggcagcgc tggcgccagt ggcgacagga 60
gccgcgcgac cggcaaaaat acacgggagg ccgtcgccga aaagagtccg cggtcctctc 120
tcgtaaacac actctcctcc accggcgcct ccccctccgc tctgcgcgcc gcccggctgg 180
gcgcccgagg ccgctccgac tgctatgtga ccgcgaggct gcgggaggaa ggggacaggg 240
aagaagaggc tctcccgcgg gagcccttga ggaccaagtt tgcggccact tctgcaggcg 300
tcccttctta gctctcgccc gccccttcct gcagcctagg cggcccgggt tctcttctct 360
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gccgaggagg aggtacgcgc ccgcttgcgc tccggcctct actcggcggt catcgtctac 720

gacgagcgca gcccgcgcgc cgagagcctc cgcgaggaca gcaccgtgtc gctggtggtg 780
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accacctctc ccagctgtta gagccgccct gggggcccca gaaccagagc tggctcccag 1620
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aaggactccg aatacataat aaaagcaaac agaacactcc aacttagagc aataacggct 1800
gccgcagcag ccagggaaga ccttggtttg gtttatgtgt cagtttcact tttccgatag 1860
aaatttctta cctcattttt ttaagcagta aggcttgaag tgatgaaacc cacagatcct 1920
agcaaatgtg cccaaccagc tttactaaag gggaggaag ggagggcaaa gggatgagaa 1980
gacaagtttc ccagaagtgc ctggttctgt gtacttgtcc ctttgttgtc gttgttgtag 2040
ttaaaggaat ttcatttttt aaaa 2064

<210> 826
<211> 2109
<212> DNA
<213> Homo sapiens

<400> 826
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aaagagtccg cggtcctctc tcgtaaacac actctcctcc accggcgcct cccctccgc 120
tctgcgcgcc gcccggctgg gcgcccgagg ccgctccgac tgctatgtga ccgcgaggct 180
gcgggaggaa ggggacaggg aagaagaggc tctcccgcgg gagcccttga ggaccaagtt 240
tgcggccact tctgcaggcg tcccttctta gctctcgcct gccccttct gcagcctagg 300
cggcccaggt tctcttctct tcctcgcgcg cccagccgcc tcggttcccg gcgaccatgg 360
tgacgatgga ggagctgcgg gagatggact gcagtgtgct caaaaggctg atgaaccggg 420
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gcggcaagtg cctgctgctg gactgcagac cgttcctggc gcacagcgcg ggctacatcc 540
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acaagtgcat cccagtggaa gataaccaca aggccgacat cagctcctgg ttcatggaag 1140
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cctacctgca cagccccatc accacctctc ccagctgtta gagccgccct gggggcccca 1560
gaaccagagc tggctcccag caagggtagg acgggccgca tgcgggcaga aagttgggac 1620
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ggagggcaaa gggatgagaa gacaagtttc ccagaagtgc ctggttctgt gtacttgtcc 1980
ctttgttgtc gttgttgtag ttaaaggaat ttcatttttt aaaagaaatc ttcgaaggtg 2040
tggttttcat ttctcagtca ccaacagatg aataattatg cttaataata aagtatttat 2100
taagacttt 2109

<210> 827
<211> 394
<212> PRT
<213> Homo sapiens

<400> 827
Met Val Thr Met Glu Glu Leu Arg Glu Met Asp Cys Ser Val Leu Lys
1   5   10   15

Arg Leu Met Asn Arg Asp Glu Asn Gly Gly Gly Ala Gly Gly Ser Gly
            20   25   30

Ser His Gly Thr Leu Gly Leu Pro Ser Gly Gly Lys Cys Leu Leu Leu
        35   40   45

Asp Cys Arg Pro Phe Leu Ala His Ser Ala Gly Tyr Ile Leu Gly Ser
    50   55   60

Val Asn Val Arg Cys Asn Thr Ile Val Arg Arg Arg Ala Lys Gly Ser
65   70   75   80

Val Ser Leu Glu Gln Ile Leu Pro Ala Glu Glu Glu Val Arg Ala Arg
                85   90   95

Leu Arg Ser Gly Leu Tyr Ser Ala Val Ile Val Tyr Asp Glu Arg Ser
            100   105   110

Pro Arg Ala Glu Ser Leu Arg Glu Asp Ser Thr Val Ser Leu Val Val
        115   120   125

Gln Ala Leu Arg Arg Asn Ala Glu Arg Thr Asp Ile Cys Leu Leu Lys
    130   135   140

Gly Gly Tyr Glu Arg Phe Ser Ser Glu Tyr Pro Glu Phe Cys Ser Lys
145   150   155   160

Thr Lys Ala Leu Ala Ala Ile Pro Pro Pro Val Pro Pro Ser Ala Thr
                165   170   175

Glu Pro Leu Asp Leu Gly Cys Ser Ser Cys Gly Thr Pro Leu His Asp
            180   185   190

Gln Gly Gly Pro Val Glu Ile Leu Pro Phe Leu Tyr Leu Gly Ser Ala
195 200 205

Tyr His Ala Ala Arg Arg Asp Met Leu Asp Ala Leu Gly Ile Thr Ala
210 215 220

Leu Leu Asn Val Ser Ser Asp Cys Pro Asn His Phe Glu Gly His Tyr
225 230 235 240

Gln Tyr Lys Cys Ile Pro Val Glu Asp Asn His Lys Ala Asp Ile Ser
245 250 255

Ser Trp Phe Met Glu Ala Ile Glu Tyr Ile Asp Ala Val Lys Asp Cys
260 265 270

Arg Gly Arg Val Leu Val His Cys Gln Ala Gly Ile Ser Arg Ser Ala
275 280 285

Thr Ile Cys Leu Ala Tyr Leu Met Met Lys Lys Arg Val Arg Leu Glu
290 295 300

Glu Ala Phe Glu Phe Val Lys Gln Arg Arg Ser Ile Ile Ser Pro Asn
305 310 315 320

Phe Ser Phe Met Gly Gln Leu Leu Gln Phe Glu Ser Gln Val Leu Ala
325 330 335

Thr Ser Cys Ala Ala Glu Ala Ala Ser Pro Ser Gly Pro Leu Arg Glu
340 345 350

Arg Gly Lys Thr Pro Ala Thr Pro Thr Ser Gln Phe Val Phe Ser Phe
355 360 365

Pro Val Ser Val Gly Val His Ser Ala Pro Ser Ser Leu Pro Tyr Leu
370 375 380

His Ser Pro Ile Thr Thr Ser Pro Ser Cys
385 390

<210> 828
<211> 453
<212> DNA
<213> Homo sapien

<400> 828
ggatcattta attgcatact ctatgaccac gcacatgtaa agccccttct gcaaaagaga 60
cctaaaccag atgagaagta ttattcatcc agcatatggg gaccaacatg tgatggcctc 120
gatcggattg ttgagcgctg tgacctgcct gaaatgcatg tgggtgattg gatgctcttt 180
gaaaacatgg gcgcttacac tgttgctgct gcctctacgt tcaatggctt ccagaggccg 240
acgatctact atgtgatgtc agggcctgcg tggcaactca tgcagcaatt ccagaacccc 300

gacttcccac ccgaagtaga ggaacaggat gccagcaccc tgcctgtgtc ttgtgcctgg 360
gagagtggga tgaaacgcca cagagcagcc tgtgcttcgg ctagtattaa tgtgtagata 420
gcactctggt agctgttaac tgcaagttta gct 453

<210> 829
<211> 452
<212> DNA
<213> Homo sapien

<400> 829
ctgggccacg aggacaccac cagcttggat cggcctcgcc gtgtggaata ctttgtagat 60
aagcaactcc aagtaaaggc tgtcacctgt gggccgtgga acacctacgt gtatgctgtg 120
gagaaaggga agagctgaca tgtgtacgta tatgtatatg caacacctgt gagacccca 180
ttcaggtcaa ggaaaaccgt tgcctgcacc ccaagggccc catatttgcc cctccccatc 240
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ggagagcatt gaaaactctg ctgcctaagg tcagcatcaa tcaaaacaat gaaatcaatg 360
aaacaatgaa accagagctt ctaggtgtgt ggcctggata gtggtagatt caaagctcca 420
cccacctcat cccaggtaca tttgatgtgc ag 452

<210> 830
<211> 450
<212> DNA
<213> Homo sapien

<400> 830
ctgaccccc tttgtccaca gctaagatgg cagcagaatg ctatgtcact atatacagaa 60
acaagacaac ctgaagctaa atggatgccc cctgcagagt caacaggtcc agcctcacag 120
tgcacgccct gagctacagc ctctcccaaa aggcatcttc cccacagcct caacgccgag 180
caaggagcat caagggtttg tctcggttgt tttgttcttt ttacaaacta tagatatata 240
cagttgaaaa ctcaggattt ctagccaata accatagtta ccaccacctt acaaataaaa 300
agaaaatgcc agaaacatct ttaaatgcct tgtcacacca acagcaaagt gcacagagtg 360
aggagaacac gagagtgcct tttcatttta aaaatgtttg gaaatatgta caactttgat 420
acagtttcag ggtgctccag acacccatgg 450

<210> 831
<211> 395
<212> DNA
<213> Homo sapien

<400> 831
ctctaaaccc ctccacattc ccgcggtcct tcagactgcc cggagagcgc gctctgcctg 60
ccgcctgcct gcctgccact gagggttccc agcaccatga gggcctggat cttctttctc 120
ctttgcctgg ccgggagggc cttggcagcc cctcagcaag aagccctgcc tgatgagaca 180
gaggtggtgg aagaaactgt ggcagaggtg actgaggtat ctgtgggagc taatcctgtc 240
caggtggaag taggagaatt tgatgatggt gcagaggaaa ccgaagagga ggtggtggcg 300
gaaaatccct gccagaacca ccactgcaaa cacggcaagg tgtgcgagct ggatgagaac 360
aacaccccca tgtgcgtgtg ccaggacccc accag 395

<210> 832
<211> 291
<212> DNA
<213> Homo sapien

<400> 832

ctgactcttc catctgtgca ggttgactga ggtcattcct gagttgcagt atgttgagag 60
ggtaatattt ctgtcttctc taactcccca tactcccttg tcttccactc tccacttagg 120
agttttttgt gagttatgtc cttgttgctt ttgcctcttt ttctttctag ccttgattgt 180
gccagaagac aatgtcccta ttcacacact ctttctgctt ttctgtgggc aggaacatgg 240
aaggggtgct gatggacgtg gactgtgaga gcgtctaccc cactgtgtag g 291

<210> 833
<211> 491
<212> DNA
<213> Homo sapien

<400> 833
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tacttgttgt tgctttgttt ggagggtgtg gtggtctcca ctcccgcctt gacggggctg 120
ctatctgcct tccaggccac tgtcacggct tccgggtaga agtcacttat gagacacacc 180
agtgtggcct tgttggcttg aagctcctca gaggagggcg ggaacagagt gaccgagggg 240
gcagccttgg gctgacctag gacggtcagc ttggtccctc cgccgaagac cacattattg 300
ccgtcccacg tctgacagta atagtcagcc tcatccatag cctgggtccc gctgatggtc 360
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ttattatctt gataaatgac taccacaggg gactggcctg gcttctgttg ataccaacaa 480
gcagatacct g 491

<210> 834
<211> 308
<212> DNA
<213> Homo sapien

<400> 834
ctggtcgagg tccacgccgc ggtaggtgaa cttgcggaag gtccgcttct tcttctgctc 60
tacttctgcc gtgctggaga acatcgaact gaacaagaag agtatgtatt cccgtgtgcc 120
agagtgccag gtcaccacat actattatgt tgggttcgca tatttgatga tgcgtcgtta 180
ccaggatgcc atccgggtct tcgccaacat cctcctctac atccagagga ccaagagcat 240
gttccagagg accacgtaca agtatgagat gattaacaag cagaatgagc agatgcatgc 300
gctgctgg 308

<210> 835
<211> 472
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(472)
<223> n = A,T,C or G

<400> 835
ctgacatgtt aactgtgatg cataaaactc gatcttctga tggggagtaa gtgcagaagg 60
tagaaatctc cgcccccgcgg gggcttatct gtactggtag ttcatgctgt ggtctgcgtt 120
tctgccatag ccgccttgtg aggactggta ggagctggga gggccactgt agttctggcc 180
ggaccccggg gagttgtagt tcgactgtga gtagcctcct tgtttgcctt ggtatgagga 240
gccgccccca gaacctccgc cgtagccccc gtgtgaccct gggttgtagg atgccccgcc 300
tgagccgtag ctgttcccgc cgcttcggcc tccactacca ctgtagttga atttgctctc 360
gtagntgtag tcggatccgc ccccgccccc gggagagttg tnggganttcg agtaggagta 420
gctgccttgt ccatggttat agcctttctg cttgcccctgt ggagggccat ag 472

<210> 836
<211> 354
<212> DNA
<213> Homo sapien

<400> 836
ccagtgcaac cttcagatag acacatggtg accagagccc gccaggcttc tgcaggtggc 60
agtgtcgagc aagtgtaaga tgtctgtggg aaggagaagc tcctgaaatg aacgttctgc 120
aaacagaagg ctgaggggtc ttccaggcat gtccagtcac taggagctgc caccggtggg 180
cttgagtgcc aggctctagg ctttgtgcag aaagcacccg gggcgggggg cggtaaggga 240
gagcaaaatg ggtctctctc aactgcagtc agtgctcctg ggaacacggt ctcacagaca 300
gcacatattc tacgtcacag ctctagggtt tcaaggactt agccatccga cagg 354

<210> 837
<211> 318
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(318)
<223> n = A,T,C or G

<400> 837
ctgaaaatga aggtaattaa aaccatggag gcgatcagcg aggttctcca ggaccttagg 60
tttgatgcgg aatctgccga gtgatggcgg ctccccaggg atgcgccgag ggagatggga 120
aacggggcgg atggcgccca gcccagccct aactgccagc cacattgaag cggacattgg 180
caaccgggtc cccagccatg cgcagaaccg tgggtagcat gtgcttggtg gtgatgtcct 240
gcccacagac ctcagacggc acattgatgc agaagagcgt antcatgcgg tgcaggtagt 300
tggggtctcc ggacatgg 318

<210> 838
<211> 277
<212> DNA
<213> Homo sapien

<400> 838
ctgcgcgtcg ccaaagtgac aggcggtgcg gcctccaagc tctctaagat ccgagtcgtc 60
cggaaatcca ttgcccgtgt tctcacagtt attaaccaga ctcagaaaga aaacctcagg 120
aaattctaca agggcaagaa gtacaagccc ctggacctgc ggcctaagaa ggcacgtgcc 180
atgcgccgcc ggctcaacaa gcacgaggag aacctgaaga ccaagaagca gcagcggaag 240
gagcggctgt acccgctgcg gaagtacgcg gtcaagg 277

<210> 839
<211> 276
<212> DNA
<213> Homo sapien

<400> 839
ccaaggaatg caggctgtac tatctgcgaa atggagaacg tatttcagtg tcggcagcct 60
ccaagctgct gtccaacatg atgtgccagt accggggcat gggcctctct atgggcagta 120
tgatctgtgg ctgggataag aagggtcctg gactctacta cgtggatgaa catgggactc 180
ggctctcagg aaatatgttc tccacgggta gtgggaacac ttatgcctac ggggtcatgg 240

acagtggcta tcggcctaat cttagccctg aagagg 276

<210> 840
<211> 453
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(453)
<223> n = A,T,C or G

<400> 840
ccttctttgc catgaccaag ctctttcagt ccaatgatcc cacactccgt cggatgtgct 60
acttgaccat caaggagatg tcttgcattg cagaggatgt catcattgtc accagcagcc 120
taacaaaaga catgactggg aaagaagaca actaccgggg cccggccgtg cgagccctct 180
gccagatcac tgatagcacc atgctgcagg ctattgagcg ctacatgaaa caagccattg 240
tggacaaggt gcccagtgtc tccagctctg ccctcgtgtc ttccttgcac ctgctgaagt 300
gcagctttga cgtggtcaag cgctgggtga atgaggctca ggaggcagca tccagtgata 360
acatcatggt ccagtaccac gcactanggc tcctgtacca tgtgcgtaag aatgaccgcc 420
tagccgtcaa taagatgatc agcaaggtcg cac 453

<210> 841
<211> 142
<212> DNA
<213> Homo sapien

<400> 841
agcctctcta gtggcagagc agctcacact ccctccgctg ggaacgatgg cttctgccta 60
gtacctatcc ttgtgtttct gatgcagtgg tagcattggt tcaagttctc tcctgctgtg 120
gtcagagttg cttcgatgtt gg 142

<210> 842
<211> 83
<212> DNA
<213> Homo sapien

<400> 842
cctaaaagca gccaccaatt aagaaagcgt tcaagctcaa cacccactac ctaaaaaatc 60
ccaaacatat aactgaactc ccc 83

<210> 843
<211> 482
<212> DNA
<213> Homo sapien

<400> 843
ccatcggtgt ctggcagatg cggcacctca agagcttctt tgaagccaag aagcttgtgt 60
agctgtccca ggcgtcacaa cccatcctcc caggctgggg gagaaaggac ctcctggaac 120
tgacttcttc tgtcaggagg actggtttcc agccatacct gttctggaag ggagaggggc 180
tggaggcacc cacaggcaca agctgaaggc agcagcttgg ctaatactga gcaggtagtg 240
gggcaaattc ctgccctctc tctctggcct ctgggccgtt tggtagtaat cacccagggg 300
ctggtaaagc ccctcctctt ggcacctcag aatcacagtg ttactgatca gggatgtgag 360
gctgctgttg gggtggggg gaggggaatg ggcaggcaag ccagtcttct gtcttccttt 420

gctaacttag ggttttgagc aggttggggg tatggtgcct gtcataccca cctgccaccc 480
tg 482

<210> 844
<211> 534
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(534)
<223> n = A,T,C or G

<400> 844
ccagattttt caagtttaaa ggaggaaact gcttattgga aggaactttc cttgaagtat 60
aagcaaagct tccaggaagc tcgggatgag ctagttgaat tccaggaagg aagcagagaa 120
ttagaagcag agttggaggc acaattagta caggctgaac aaagaaatag agacttgcag 180
gctgataacc aaagactgaa atatgaagcg gaggcattaa aggagaagct agagcatcaa 240
tatgcacaga gctataagca ggtctcagtg ttagaagatg atttaagtca gactcgggcc 300
attaaggagc agttgcataa gtatgtgaga gagctggagc aggccaacga cgacctggag 360
cgagccaaaa gggcaacaat agtttcactg gaagactttt gaacaaaggc taaaccaggc 420
cattgaacga aatgcatttt tagaaagttg aacttgatga aaaaggaatc tttgttggtc 480
tctgtacaga ggttnaagga tgaagcanga gatttaaggc aagaactagc agtt 534

<210> 845
<211> 175
<212> DNA
<213> Homo sapien

<400> 845
tcgacctgtg gcaaatgtgg ctaccctgcc aagcgcaaga gaaagtataa ctggagtgcc 60
aaggctaaaa gacgaaatac caccggaact ggtcggatga ggcacctaaa aattgtatac 120
cgcagattca ggcatggatt ccgtgaagga acaacaccta aacccaagag ggcag 175

<210> 846
<211> 179
<212> DNA
<213> Homo sapien

<400> 846
cgcgtggaca gttgcgaggg gtctgtgtga aggcacttgt cacgagcttc aatactgccg 60
ccgtcccagg atgggagaac tgcgcagcag gaagggcact tctgaaagca cagtggagag 120
atcgctggag cgggcgttct gggcaggagg aagcacagac ggcaggcagg gtggactgg 179

<210> 847
<211> 410
<212> DNA
<213> Homo sapien

<400> 847
ccaccaaaac cagtcacaag acctggagtt gtctgtgcag atgtacgccc aagccgccct 60
ggatggagac tcccagggat tttttaacct ggccctgcta atcgaggaag gtacgataat 120
cccacaccat atcttggatt tcttggaaat tgactcaact ctccattcta ataacatctc 180
cattctccag gaactgtacg aaaggtgctg gagccacagt aacgaggagt ccttcagccc 240

ctgctccttg gcctggcttt acctgcactt gcggcttctc tggggtgcta tcctgcactc 300
agccctgatc tactttctgg gaacctttct gctatccata ttgatcgcct ggactgtgca 360
gtatttccag tctgtctcag caagcgatcc ccctccaaga ccatcccagg 410

<210> 848
<211> 557
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(557)
<223> n = A,T,C or G

<400> 848
cacgggcccc cagccctgtg tcggccttgt ctgtctcagc tcaaccacag tctgacacca 60
gagcccactt ccatcctctc tggtgtgagg cacagcgagg gcagcatctg gaggagctct 120
gcagcctcca cacctaccac gacctcccag ggctgggctc aggaaaaacc agccactgct 180
ttacaggaca gggggttgaa gctgagcccc gcctcacacc cacccccatg cactcaaaga 240
ttggatttta cagctacttg caattcaaaa ttcagaagaa taaaaaatgg gaacatacag 300
aactctaaaa gatagacatc agaaattgtt aagttaagct ttttcaaaaa accagcaatt 360
ccccagcgta gtcaagggtg gacactgcac gctctggcat gatgggatgg cgaccgggca 420
agctttcttc ctcgagatgc tctgctgctt gagagctatt gctttgttaa gatataaaaa 480
ggggtttctt tttgtctttc tgtaaggngg acttccagct tttgattgaa agtcctaggg 540
tgattctatt tctgctg 557

<210> 849
<211> 525
<212> DNA
<213> Homo sapien

<400> 849
ctgatggttt ggaaatgaga gaactacagt ggtgaagaga ccaggaggca gctctcagtg 60
aaaccaacat tgcggatgcc cttcgtgagc cttctcagtc ccagcaggaa gcccacaaca 120
ctggcctccc cagcctgcct gctgacaaca cctaggctta ctttatctaa aatcagagtg 180
taccaggtct gtagcagaaa ataatcaact aaatgtcagg gacctatgag tcatttaaaa 240
caaaagagga agtgaaagcc attaggcaag ctatgtgctg ggctgctaac gtagcccctg 300
cagggagggg tcaggagcgc gctgcagtga gccttgggtc tcgcaggccc agccctgctg 360
caaggagcca gggcacccag gaaacatcag cacacacaca cacagggacc ctcccttcat 420
gtcacttgtt ttgctgccct aaatggcttc ttgcacccta acccctgatc ctggaagaag 480
gcagagagac tggcccgtac agagacctgc aattctacgc aagct 525

<210> 850
<211> 384
<212> DNA
<213> Homo sapien

<400> 850
cctcttggag cacatccttt actgcattgt ggacagcgag tgtaagtcaa gggatgtgct 60
ccagagttac tttgacctcc tgggggagct gatgaagttc aacgttgatg cattcaagag 120
attcaataaa tatatcaaca ccgatgcaaa gttccaggta ttcctgaagc agatcaacag 180
ctccctggtg gactccaaca tgctggtgcg ctgtgtcact ctgtccctgg accgatttga 240
aaaccaggtg gatatgaaag ttgccgaggt actgtctgaa tgccgcctgc tcgcctacat 300
atcccaggtg cccacgcaga tgtccttcct cttccgcctc atcaacatca tccacgtgca 360

gacgctgacc caggagaacg tcag 384

<210> 851
<211> 423
<212> DNA
<213> Homo sapien

<400> 851
ctcaggaaaa accagccact gctttacagg acagggggtt gaagctgagc cccgcctcac 60
acccaccccc atgcactcaa agattggatt ttacagctac ttgcaattca aaattcagaa 120
gaataaaaaa tgggaacata cagaactcta aaagatagac atcagaaatt gttaagttaa 180
gctttttcaa aagatcagca attccccagc gtagtcaagg gtggacactg cacgctctgg 240
catgatggga tggcgaccgg gcaagctttc ttcctcgaga tgctctgctg cttgagagct 300
attgctttgt taagatataa aaaggggttt ctttttgtcc ttctgtaagg tggacttcca 360
gcttttgatt gaaagtccta gggtgattct atttctgctg tgatttatct gctgaaagct 420
cag 423

<210> 852
<211> 413
<212> DNA
<213> Homo sapien

<400> 852
ctgaaaacag tgggaggcca gatgctggca tcttccagac gggagcatag ccatggtcac 60
tctagccgat gtctcctggg gctctcaggc ggcaaggacc agatgcacca ctactgtcca 120
atcccagttt tacttagagc cacctccttt tttgggggcca ttagtcctta tttcatgcca 180
gattttcact agcggctccc tgttcttcca aatcaattca tgaccgtaag taacatacca 240
tattccaaaa agagctcccc caagatgtgc cgcatgatca aaaaatttcc atcccaggat 300
cattcctgct gtatccatgg cgataatggc tttcagggca ttccctgctg tgaacgtgaa 360
catcggaagg aaaataatgg caagcctccc ttctgggatc ttagtgcaga cag 413

<210> 853
<211> 288
<212> DNA
<213> Homo sapien

<400> 853
atctgtgagt tctgagaggc atttaggcca tgggacaggg aggatcctgt ctggccttca 60
gtttccatcc ccaggatcca cttggtctgt gagatgctag aactcccttt caacagaatt 120
cacttgtggc tattagagct ggaggcaccc ttagccactt cattcccctg atgggccctg 180
actcttcccc ataatcactg accagccttg acactcccct tgcaaaccat cccagcactg 240
caccccaggc agccactcct agccttggcc tttggcatga gatggggg 288

<210> 854
<211> 427
<212> DNA
<213> Homo sapien

<400> 854
ccaagtgaga tcagccctca agggcacatg ccaagggcag agcagcccat gtagacagct 60
tcggagggca tgggggtgta gggagttcgg ggtagctcct cattaactat ttgttgggtg 120
agtaaagggg tgaggctcag tggcaggtac ctctgcaatg acaagctgcc tcccctctat 180
gtgtttagca tatgttatta gaacgtgtcc gacaccccta ccgctgccat ttgggccctt 240
taataaagcc aagtagagaa atctggcaat aaaaggcaaa tgtaagcatg ctttctttaa 300

gacgcatcat aaatggtttt ctttaagtga atggaagagt ttgacagaga tacacctttg 360
taagaaaaca ttaagaatgc tggctgactg tggtggctca cacctgtatt cccagcactt 420
tgggagg 427

<210> 855
<211> 311
<212> DNA
<213> Homo sapien

<400> 855
ccagtattcc tggaggatat aacactgaca tcagcagggt tttcaatggc aacaattgca 60
cgagctgcca gcagaagctt ctcccaggtc ctcttgagat ttatgatata gatgccatca 120
cttttccttt tatagatgta ctgttccatc tggaagtcaa gattggtgcc acctaagtgg 180
gttcctgctg caaggaactt aaggacatcc tcctccttca tttgcaggac atcaagggct 240
ccggacattg tgaaagtttc cctttaagtt acgacgggaa tccagaacaa cgccgtatgg 300
acccctctgc a 311

<210> 856
<211> 328
<212> DNA
<213> Homo sapien

<400> 856
cctatggaag tttggtgctt tgctccctgt gtttgcgaaa caggtatctc gtgatttcag 60
aaaagcttga ggagattaag tctttccggg agctgacctg cctggatctt tcctgttgca 120
agcttggaga tgagcatgaa cttctagaac atctcaccaa tgaagccctg tctagtgtaa 180
ctcagctcca cctgaaggat aattgtctat ctgatgctgg ggtgcggaag atgacagcac 240
cagttcgagt gatgaaaaga ggtatccaat gcctgcatct gtgatctcag ggttacatga 300
taagtctaat aatgttagat tctcaagg 328

<210> 857
<211> 502
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(502)
<223> n = A,T,C or G

<400> 857
ctgaccggac cggtcatgcc cgtccggaac gtctataaga aggagaaagc tcgagtcatc 60
actgaggaag agaagaattt caaagccttc gctagtctcc gtatggcccg tgccaacgcc 120
cggctcttcg gcatacgggc aaaaagagcc aaggaagccg cagaacagga tgttgaaaag 180
aaaaaataaa gccctcctgg ggacttggaa tcagtcggca gtcatgctgg gtctccacgt 240
ggtgtgtttc gtgggaacaa ctgggcctgg gatggggctt cactgctgtg acttcctcct 300
gccaggggat ttggggcttt cttgaaagac agtccaagcc ctggataatg ctttactttc 360
tgtgttgaag cactgttggt tgtttggtta gtgactgatg taaaacggtt ttcttgtggg 420
gaggttacag aggctgactt cagagtggac ttgtgttttt tctttttaaa gangtaaggt 480
tgggctggtg ctcacagacc tc 502

<210> 858
<211> 411
<212> DNA

<213> Homo sapien

<400> 858
cggccgaggt ccttaatagt taagttacag ctaagaatgt catgtcttgg gttggaattt 60
tcatttttag caccgttaat gtattcactt aaatctatgt tagcaccttg tctccaggca 120
gaacaacaaa ccatccaaac attttaaaca ttgggggaaa cacgaagggg agggttaaag 180
acagaatcca gtactgtgga aggagtggat ttagatcaca agatccttgt cgatatcctt 240
ctgcttgatg ccgaagcagc cggcccactc atccagggcg atgtacttgt cattgtccag 300
gtcacaggtc tcgaaaaagc gggtggtgca atgctccatg gggatgaggg gagcacgcag 360
tggagccagc tcggtgtggg agaggtaccc gtcaatgggg tgctggtcca g 411

<210> 859
<211> 232
<212> DNA
<213> Homo sapien

<400> 859
aaatcacaga gggacttagt attccattaa tgcaaatgga aacattaagt tcatcatcag 60
atgataaaag gaaaaaaaaa acctgatact catctcaaaa gacgcagaga agacatctgc 120
ataaatccag tacctattat tatttcaaat ttaaaaactt cttcttttt aagagatagg 180
gtatcactat gttgcccagg ctgatcttga actcttggcc tcagatgatc ct 232

<210> 860
<211> 235
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(235)
<223> n = A,T,C or G

<400> 860
tgcccagaaa ggaaggggct attgcctcct cccagccacg ttccctttcc tcctctccct 60
cctgtggatt ctcccatcag ccatctggtt ctcctcttaa ggccagttga agatggtccc 120
ttacagcttc ccaagttagg ttagtgatgt gaaatgctcc tgtccctggc cctacctcct 180
tccctgtccc caccccctgca taaggcagtt gttggttttc ttccccaatn ctttt 235

<210> 861
<211> 457
<212> DNA
<213> Homo sapien

<400> 861
ccaaaggaaa gttggaaggc aactgacaga ttctgccttt taggtacttg aactggcagg 60
aaatgcatca aaagacttaa aggtaaagcg tattacccct cgtcacttgc aacttgctat 120
tcgtggagat gaagaattgg attctctcat caaggctaca attgctggtg gtggtatgtt 180
aacttctaac attttaaaaa atttcttcag aggaaggaat tttttgctgc ttttaattag 240
tttttccagg agaggaaatt taagtatatt ttcaatgatg gaagtatggt tgtatcatga 300
aatttgattt atatgtataa ctcaatgaat ttttacctca tacttgagct gcatgttttt 360
aaagatacct ttcaagttga acagtataca ctttcttggt ttcaaatact gtgatttttt 420
aaaaaatctt aagtagaatt aattcctgtc actcccc 457

<210> 862

<211> 561
<212> DNA
<213> Homo sapien

<400> 862
ccaggtcatc accattggca atgagcggtt ccggtgtccg gaggcgctgt tccagccttc 60
cttcctgggt atggaatctt gcggcatcca cgagaccacc ttcaactcca tcatgaagtg 120
tgacgtggac atccgcaaag acctgtacgc caacacggtg ctgtcgggcg gcaccaccat 180
gtatccgggc attgccgaca ggatgcagaa ggagatcacc gccctggcgc ccagcaccat 240
gaagatcaag atcatcgcac ccccagagcg caagtactcg gtgtggatcg gtggctccat 300
cctggcctca ctgtccacct tccagcagat gtggattagc aagcaggagt acgacgagtc 360
gggcccctcc atcgtccacc gcaaatgctt ctaaacggac tcagcagatg cgtagcattt 420
gctgcatggg ttaattgaga atagaaattt gcccctggca aatgcacaca cctcatgcta 480
gcctcacgaa actggaataa gccctcgaaa agaaattgtc cttgaagctt gtatctgata 540
tcagcactgg attgtagaac t 561

<210> 863
<211> 291
<212> DNA
<213> Homo sapien

<400> 863
ccatagctgt cccacctatg gttttaaaaa cagactgtaa cttgatcttc tgaaatcctt 60
ctcgaaccac aactcgttct gttaaagaaa tcctaggaaa gaagtcctac tgatattgtc 120
gatagtctcc aaaaggtgag gaaggtaact gagttgaagg caactgggag gggtcttctg 180
caaactgagg accattggaa aactgtgcag aggcaaatct tgtcaacaag ataccagctc 240
cttcaattaa agctaggaga atgccaccca ttgcggctga cccaaccatg g 291

<210> 864
<211> 265
<212> DNA
<213> Homo sapien

<400> 864
ctgaactttt ccacctggag tccttgggaa taccggacgt gatcttcttt tataggtcca 60
atgatgtgac ccagtcctgc agttctggga gatcaaccac catccgcgtc aggtgcagtc 120
cacagaaaac tgtccctgga ggtttgctgc tgccaggaac gtgctcagat gggacctgtg 180
atggctgcaa cttccacttc ctgtgggaga gcgcggctgc ttgcccgctc tgctcagtgg 240
ctgactacca tgctatcgtc agcag 265

<210> 865
<211> 144
<212> DNA
<213> Homo sapien

<400> 865
cctccacctg cgttttgatc tagatgagca tattgtccat ctcccacagc ttgctccggt 60
tccgcaggta cgcccgcccg tgctcgcgcg tcagcgacgc gatgtcctcg cgcatctcgt 120
tgatgaccgg gagcagaaac tgct 144

<210> 866
<211> 241
<212> DNA
<213> Homo sapien

<400> 866
ctggctgtaa gtagcttcat agcaccagtc tttgagaatg tcaagctctc cagaaatcat 60
ggcctccagg acattgggga tgatgtcgtt ctcgcactgt ttcagaaacc ggtccttgtc 120
aaaggccggg tccacccgga ggatctccgt gagcacctcc gacatctctg tcttggagaa 180
caggcccccc agcaagtcgg tgaccttgtc cgtaagggcc cgggatgccc ggatgaacgc 240
g 241

<210> 867
<211> 364
<212> DNA
<213> Homo sapien

<400> 867
cctgggcccg ctgacttcag ggtgaggcca cagctactgc agcgcttttt atttatttat 60
ttatttactg agatggagtc ttgctctgtc acccaggctg gagtgcagtg gtgcaatctc 120
ggctcactgc aacctctgcc tcctgggctg cagtgattct cctgcgttca agtaattctc 180
ctgcctcggc cttctgagta gttgggatta caggcatatg ccaccacact tggctaattt 240
ttcgtatttt tagtagaaat ggggtttcac catgttggcg aggctggtct cgaactcctg 300
acctcaagga tcctcctgcc tcggcctcct aaggtgctgg gattgcaggt gtgagccacc 360
acgt 364

<210> 868
<211> 472
<212> DNA
<213> Homo sapien

<400> 868
ccaccagtcc acagatgtga ctggtaaggg atctagtaac agaggatgga gttgggcaga 60
atattatcct ggatgatatg cacccagcac taggatacac ctttcattag aatgaagaga 120
acagacaaag ccctcagaaa agatacaaag gcagagacat tgattagaac attatctcat 180
aacagaggtg gggccattac ccaccattat tgtaaaataa ctgtaactaa ccaaaacaca 240
tacaggcttc tttaatggag ttaataaaac tatggcacat tgggaatcag gggcagaggt 300
actgttccca gacggaaaac tgggataaag ggagccatgc tgacagggcc ttattccagt 360
ctaggttgtt agaaaggagc cctagcccag aaatgacagc aaatagccat aatcattatg 420
tggggctgaa ccagaggaag ccaggctgag ccaagaagct ggaagtatct tg 472

<210> 869
<211> 368
<212> DNA
<213> Homo sapien

<400> 869
cctttcttgt aagtgaagaa aaaggaatgc agcaaagaag agttcgacat tggagtcctt 60
agttccatca ggatcccatt cgcagccttt agcatcatgt agaagcaaac tgcacctatg 120
gctgagatag gtgcaatgac ctacaagatt ttgtgttttc tagctgtcca ggaaaagcca 180
tcttcagtct tgctgacagt caaagagcaa gtgaaaccat ttccagccta aactacataa 240
aagcagccga accaatgatt aaagacctct aaggctccat aatcatcatt aaatatgccc 300
aaactcattg tgacttttta ttttatatac aggattaaaa tcaacattaa atcatcttat 360
ttacatgg 368

<210> 870
<211> 411
<212> DNA

<213> Homo sapien

<400> 870
ggcgtgtcct tggacttaga gagtggggac gtccggcttc ggagcgggag tgttcgttgt 60
gccagcgact aaaaagagaa ttaaatatgg gtgatgttga gaaaggcaag aagattttta 120
ttatgaagtg ttcccagtgc cacaccgttg aaaagggagg caagcacaag actgggccaa 180
atctccatgg tctctttggg cgggagacag gtcaggcccc tggatactct tacacagccg 240
ccaataagaa caaaggcatc atctggggag aggatacact gatggagtat ttggagaatc 300
ccaagaagta catccctgga acaaaaatga tctttgtcgg cattaagaag aaggaagaaa 360
gggcagactt aatagcttat ctcaaaaaag ctactaatga gtaataattg g 411

<210> 871
<211> 385
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(385)
<223> n = A,T,C or G

<400> 871
tttttttttt ttnnnttttt ttttttnaaa gattcacttt atttattcat tctcctccaa 60
cattagcata attaaagcca aggaggagga gggggggtga ggtgaaanat ganctggagg 120
accgcaatag gggtaggtcc cctgtggaaa aagggtcana ggccaaagga tgggaggggg 180
tcaggctgga actgagganc aggtggggc acttntccct ntaacactnt cccctgttga 240
agctntttgt gacgggcnan ctcaggccct gatgggngac ttcncaggcg tanactttgt 300
gtttctcgna ntctgctttg ctcancgtca gggtgctgnt gaggctgtan ggtgctgtcc 360
ttgctgtcct gctntgngac actct 385

<210> 872
<211> 184
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(184)
<223> n = A,T,C or G

<400> 872
cttccttcgg tctttantat ttttgattgt tatgtaaaac tcgcttttat tttaatattg 60
atgtcagtat ttcaactgct gtaaaattat aaacttttat acttgggtaa gtcccccagg 120
ggcgagttcc tcgctctggg atgcaggcat gcttctcacc gtgcagagct gcacttggcc 180
tcag 184

<210> 873
<211> 397
<212> DNA
<213> Homo sapien

<400> 873
ctgtgggctc tgaatggcgt ccctttggct atccacgccg ccggcgacca ctgaattctg 60
tggttctaca acagggtctg gctgaccgaa ttgtcagaga cgtccaggaa ttcatcgata 120

accccaagtg gtacactgac agaggcattc cttacagacg tggctacctg ctttatgggc 180
cccctggttg cggaaagagc agttttatca cagccctggc tggggaactg gagcacagca 240
tctgcctgct gagcctcacg gactccagcc tctctgatga ccgactcaac cacctgctga 300
gcgtggcccc gcagcagagc ctggtactcc tggaggatgt ggatgctgct tttctcagtc 360
gagacttggc tgtggagaac ccagtaaagt accaagg 397

<210> 874
<211> 156
<212> DNA
<213> Homo sapien

<400> 874
ccagaagaac actatgccat ggttgcactg aattttgtgc ctactctagg gcaaacagaa 60
ttacaatcga aggagttcct atctatctgt aaagaagaga acatgaaatt ctgttggcag 120
aagcagcatt ttgaagaaat aaaaggttca ctgcag 156

<210> 875
<211> 512
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(512)
<223> n = A,T,C or G

<400> 875
ccagcatagc gaaaacttgt ctctactaaa aatacaaaaa ttagtcaggc atggtggtgc 60
acgtctgtaa taccagcttc tcaggaggct gaggcacgag gatcacttga acccaggagg 120
aggaggttgc agtgagctga gatcatgcca gggcaacaga atgagacttt gtttaaaaaa 180
aaaaaaagtg acttgattta agggaaaaaa tgactggcta tattcagtca gatatggcaa 240
agagtctcaa ggtgttaatg tgaatgatta aggtcttggg gggggtgtcc cctatcagac 300
tacaggtgtt tagaggcaca gaaaaaggtg cagttgggtt cttaatgtga aatgatgaga 360
agcacaactc cagtgtgtct ctttgtgtag aatgtcagca gacacccccct gctagatgtg 420
ctggatcatg ggaaagcatt tccatttgtt aatagattgt tcagaagttt taatttatga 480
tgggtgtggt ggctcatgcc tgtngtccca gc 512

<210> 876
<211> 199
<212> DNA
<213> Homo sapien

<400> 876
cctgtgccgg gccccagggc tggcagccac cagctcctct tccaggcatg ggggacaccc 60
tgacaggatc cggaagtctc catttaccca aaaatgcaag agccatgatc agtcatggcg 120
acactgcagg cggtactgag tgaccatgtc cagtccggct ccgtccctcc cacacggggg 180
acaagcttct ccgaggagg 199

<210> 877
<211> 486
<212> DNA
<213> Homo sapien

<400> 877

cgcgtgtgct gctcccttct gccaggagcc cactgctttt gcacacaagc tgcattttgc 60
gcattgactc aggtcccagt tgctcttcat atctccgtga atgattggag tgcaaagata 120
ctgttctgag cgcttcccgt tttctgaaag ccatgtctct caggcatgcc tcgcttagtt 180
ggcgatgggg ttggttgact gttttcgctt ttttcttctt ctcttttctt cttcttcttc 240
tttttttttc ttttcctttt ctccccctcc caacgccact gacaagaaag cactaaagat 300
gcaggttgtg cgatcaccct ataacataag gaaaagaaca ggagaggtta atttgaacgt 360
gtaggctagt ggtagaggga gatggaggtc tggggaaaga gtctgtcagg tagacatctc 420
ttttaacatg tcccagtatt cggttcacca gtatctctgc acctcactac taccсttcac 480
tccttg 486

<210> 878
<211> 363
<212> DNA
<213> Homo sapien

<400> 878
cctgggcccg ctgacttcag ggtgaggcca cagctactgc agcgcttttt atttatttat 60
ttactgagat ggagtcttgc tctgtcaccc aggctggagt gcagtggtgc aatctcggct 120
cactgcaacc tctgcctcct gggctgcagt gattctcctg cgttcaagta attctcctgc 180
ctcggccttc tgagtagttg ggattacagg catatgccac cacacttggc taatttttgt 240
atttttagta gaaatggggt ttcaccatgt tggcgaggct ggtctcgaac tcctgacctc 300
aaggatcctc ctgcctcggc ctcctaaggt gctgggattg caggtgtgag ccaccacgtc 360
tgg 363

<210> 879
<211> 365
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(365)
<223> n = A,T,C or G

<400> 879
gcccatgcca gcgtgtggtc agcacgcaca acttgtggct gctgtccttc ctgaggaggt 60
ggaatgggag cacagccatc acagacgata ccctgggtgg cactctcacc attacgctgc 120
ggaatctaca accccatgat gcgggtctct accagtgcca gagcctccat ggcagtgagg 180
ctgacaccct caggaaggtc ctggtggagg tgctggcaga ccccctggat caccggaatg 240
ctggagatct ctggttcccc ggggagtctg agagcttcga ggatgcccat atggagcaca 300
gcatctccag gagcctcttg gaaggagaaa tccccttccc acccacttcc atccttntcc 360
tcctg 365

<210> 880
<211> 431
<212> DNA
<213> Homo sapien

<400> 880
ccatctcccc tcaccccaac ctggataaaa tgttacacta cccactaata taaccactga 60
cacacaaacc aagctccttc cagtttaaca ttgaacatca atctacattt ccagtgaatg 120
agctaaactt atgagcaggc cattcaactt ttcatgatac atttagtgct cagaaatggt 180
tgattccatt agcctgccct atagctcagg tggcccaaga tggagcctat catcttcctt 240
ggggtgtttg gtgtttccaa gtaggagcat aaaaaggata ccgtccccta ccccaccacc 300

ccatcccaca taccctcact ggcatccagg agaccagcag caggctcaag accccaaatg 360
ttgggcacca caaataatgt gatatgtgcc aggagcacgg ggggtagggg tgaaagagaa 420
aaacaataag g 431

<210> 881
<211> 335
<212> DNA
<213> Homo sapien

<400> 881
ccacagaggt ggtattacaa aatatacaaa gtggtttctt tctttacatt tcatagaaga 60
agcctgcctc atttccaaat gagagcacta gaagcacaaa tcatgcagac catttactat 120
ataacttatg aaaaatgctg tacagggctg tgactataga tatagagtat ttggctctgt 180
ttgggaattg atatctacaa gggggagggt caggggagga ctgtctgata tcctgacttg 240
ctgggatggt ggagaagctg ggatggggga ggccccaatc ttgctgcacg gctacaccca 300
ctcctccttt cctagataag gctggagcgc actgg 335

<210> 882
<211> 353
<212> DNA
<213> Homo sapien

<400> 882
atgcactcaa agattggatt ttacagctac ttgcaattca aaattcagaa gaataaaaaa 60
tgggaacata cagaactcta aaagatagac atcagaaatt gttaagttaa gctttttcaa 120
aaaatcagca attccccagc gtagtcaagg gtggacactg cacgctctgg catgatggga 180
tggcgaccgg gcaagctttc ttcctcgaga tgctctgctg cttgagagct attgctttgt 240
taagatataa aaaggggttt ctttttgtct ttctgtaagg tggacttcca gcttttgatt 300
gaaagtccta gggtgattct atttctgctg tgatttatct gctgaaagct cag 353

<210> 883
<211> 193
<212> DNA
<213> Homo sapien

<400> 883
ctggcagaga agaatggcta cgtgactgtc agtgagatca aagccagtct taaatgggag 60
accgagcgag cgcggcaagt gccggaacac ctgctgaagg aagggttggc gtggctggac 120
ttacaggccc caggggaggc ccactactgg ctgccagctc tcctcactga cctctactcc 180
caggagatta cag 193

<210> 884
<211> 461
<212> DNA
<213> Homo sapien

<400> 884
ctgaagaacc ccatcagcgg gctgttagaa tatgcccagt tcgctagtca aacctgtgag 60
ttcaacatga tagagcagag tggaccaccc catgaacctc ggtaagagac cacccaggaa 120
ctgtacctag ggttggggtc aggtgctttt gctcctgacg cagtcttggc tgatttgtga 180
gcagtgctgt ttggtggcgc ctatcttttc ctccttccct tctgcctttt agctaaattc 240
cccttgattg gccctttctc cagatattga gcagggaata tagaccttgg accagccaga 300
atcttggctg aacaaggggg aggttgactc tgttggctgt aatgaagctt ctttagaaat 360
gattggtttt ggccgtacgc ggtggctcat gcctgtaatc ccagcacttt ttgaggccga 420

ggcaggcata tcacgaggtc aggagtttga gaccagcctg g 461

<210> 885
<211> 266
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(266)
<223> n = A,T,C or G

<400> 885
ctgcaatgct tcancacact tcagcaccga ggctgggcat gaggggtccg tcaccaccac 60
atcaaatacc cctaaagcaa tatctttgtt atgggcactt gaatggtgct gcttcacaga 120
ggctgcacca ccagtcatga ggatctcaga ccagagctcc aggaagttct gctgttggtc 180
tgataccaag agtaccttca gattctggaa aggattttca cggggttgcc agtccagaat 240
tctttgctcc tcaaggctgt acccag 266

<210> 886
<211> 402
<212> DNA
<213> Homo sapien

<400> 886
cgcgtggttt ccgattgttt gatagtattt actggagaga tcatagaaac gactgtgaac 60
cgatgtcaca ccaggaaggt tgttgagcat ttcttcaaca tcttcaattg tttcctttgt 120
aacctgtagg tccccgatgt ttaattttag agctccaatt gctgttttac acaggatcac 180
tgcctcatca ttacttttca ccttctcacg agtcttttcc agaaaagtaa gagccacatt 240
aggatcagtc atctgtctaa ctacatgaag aatgatttcc acgagggaca aagggttcac 300
cctgtgttca aattcactga taaagttttc ataaagctta atgagaccat ctccttgggc 360
aaagcacgga tcctgcacaa aatcaagcac ctgaagtgtc ag 402

<210> 887
<211> 342
<212> DNA
<213> Homo sapien

<400> 887
ccaaagcgag agcattggca gtgaattgca gacactcttc cttggtcatg ccttcccggt 60
aggtagcatc aacatagcca tagatgtagg agctcccgga gcctccaatg gcaaaggact 120
gccttaccat catacccccc ataggcactg agtacacctg ccctccttct tgagggtccc 180
agcctgcgat gatgattccc gccatcaggt cttcccggta tcggtaacac atctccttaa 240
agaggctggc tgctgtgtgg accagtggag gctcattcag ttcaatgctg tggaaaccga 300
gctggtaggt gacagcatca gctactgcct gggtatcagc ag 342

<210> 888
<211> 228
<212> DNA
<213> Homo sapien

<400> 888
cgcgtcggcc aaggctgctg ctgttgctcc tccaaagaag gttggcttca aggccgtgtc 60
cagggaccca cgagcagagg cactgggggg caagggatct ccaagggggc aagggatccc 120

taaaggggggt agctcacagg tgagggggtt tagggcccct ctagggagcg cctgaggcca 180
tacattcaag agtgtccctg gtgaggccca gggaagagcc aggactgg 228

<210> 889
<211> 378
<212> DNA
<213> Homo sapien

<400> 889
ttggcttttc tccccttctc atcctcctct ccccttttcct cactgaaggc tgtgagttgc 60
tttcaatgtg acaacactat gatgtcattt ggaaggattt gccaggacag actgattctg 120
agtcctgggt gccgtatgtg tatgcggcag tgttgtcagg cgatcttgtt tgaagctcta 180
tgttgccata attaccatca agtacacact gttggcaaaa ggctaacacc tgactttagg 240
aaatgctgat ttgagaacaa aaggaaaggt ctttttcac tgcttaaagt ggggtcactt 300
tgataccttt gcggtcatgt ctgtgtctga tgagtgtaga atctctggat gtgcactgtc 360
agtcatgtgt ccaccagg 378

<210> 890
<211> 215
<212> DNA
<213> Homo sapien

<400> 890
ccattttgga gtgtgtccat tgggtagcaa tgtggaaacc accagggcct ttgtggagaa 60
aatggagggg gttgagggag tcccaggagg ggcttatttg agggcctttg ccacttgctc 120
ataggcgagc tcgatctcct catcatctgg acaggtggaa gcgaattctt cccgggcgta 180
ggcattgctc aagtaccgat gcactccccg gaagg 215

<210> 891
<211> 412
<212> DNA
<213> Homo sapien

<400> 891
ctggtcaagt tcaacagagc cttggctgac cattctatgg ctcaggcacc tcggctcatt 60
gatggcattg ttcttaccaa atttgatacc attgatgaca aggtgggagc tgctatttct 120
atgacgtaca tcacaagcaa acccatcgtc tttgtgggca ccggccagac ctactgtgac 180
ctacgcagcc tcaatgccaa ggctgtggtg gctgccctca tgaaggctta acgtggctct 240
tgcccaatac caaatcgccg ctttccccac aagcccttct tcctgtatca agaatgtgct 300
ttagagtatg tgagcaacct gtcttcagtg tagtacaaag gcagagtgag gggcttgtg 360
gctccttcca accccactcc ccgttcagca cagccgccat ctgcaaggaa gg 412

<210> 892
<211> 472
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(472)
<223> n = A,T,C or G

<400> 892
ttttttttt ttttttttt ttaattacta ccttttattc taatgtgaac catggccctg 60

aaagctgata acaagcttgg ctgancagag ggaactaggg gtcggcagaa aggattatgg 120
gtggaaaaca ttggctcttc cttggggagt gatgctgggg aaagggaana nagtggctca 180
ncctgcaggt aaataggcta naaaagccaa ggccaaaggc tggaggggag aggacagtca 240
gcatgtccag cctggggtct gggtgtaggg ttatcccttc tccctgtgcc ttcccatctc 300
gtccatgagc ctaggtcttg gagccttgtg ttggaggctg ctgtgatgtc aggaacgggg 360
atctgtctag cttttggcca cttcctggga cctcacgccc ctgttgacag atggagattg 420
ggcagcaggg ccttgctgcg ttgttatctg ctgttccgac ttggtttgtc tt 472

<210> 893
<211> 477
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(477)
<223> n = A,T,C or G

<400> 893
caaagattca ctttatttat tcattctcct ccaacattag cataattaaa gccaaggagg 60
aggaggggg tgaggtgaaa gatgagctgg aggaccgcaa taggggtagg tcccctgtgg 120
aaaaagggtc agaggccaaa ggatgggagg gggtcaggct ggaactgagg agcaggtggg 180
ggcacttctc cctctaacac tctcccctgt tgaagctctt tgtgacgggc gagctcaggc 240
cctgatgggt gacttcgcag gcgtagactt tgtgtttctc gtagtctgct ttgctcagcg 300
tcagggtgct gctgaggctg taggtgctgt ccttgctgtc ctgctctgtg acactctcct 360
gggagttacc cgattggagg gcgttatcca ccttccactg tactttggcc tctctgggat 420
agaagttatt cagcangcac acaacanang cagtttccag atttcaactg ctcatca 477

<210> 894
<211> 289
<212> DNA
<213> Homo sapien

<400> 894
ctgtcttatg gctatgatga gaaatcaacc ggaggaattt ccgtgcctgg ccccatgggt 60
ccctctggtc ctcgtggtct ccctggcccc cctggtgcac ctggtcccca aggcttccaa 120
ggtcccccctg gtgagcctgg cgagcctgga gcttcaggtc ccatgggtcc ccgaggtccc 180
ccaggtcccc ctggaaagaa tggagatgat ggggaagctg gaaaacctgg tcgtcctggt 240
gagcgtgggc ctcctgggcc tcagagtgct cgaggattgc ccggaacag 289

<210> 895
<211> 179
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(179)
<223> n = A,T,C or G

<400> 895
ctggatgggt ccanacaaag tggaatccct ggaaccttta actgagcagt gaaggtcagt 60
gcctcagagc ctgagagatg aacaggacca gagagagagg tgggcaggca ggcacaaggt 120
tatgtcttcc tcagactcgg aaccctgctc ttctccacca tccagacgtt cagctacag 179

<210> 896
<211> 557
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(557)
<223> n = A,T,C or G

<400> 896
ccactcactg ctgggaccca ggcacctccc ttctccatcc tctctggatt gtcagtaatg 60
tcctggaaca gaagcctgtg ggatggcctt gggcacggag aagccctggg gtcagtgtcg 120
tgcacggatg gcggcagtgt tgaacccagg aggctgaacc cggcccacca cggaagatga 180
gtgcatggca accgcctgcc ttcacgtcgc tccacttggt aaccccaagg tctgggctgt 240
tctaggtatt gcttcacgtg ccccagcaag cccttaacaa gagggcctgg ttccctgaag 300
aaccaatccc aggaaggggc cttgatccct ccgccttgct gagagtgaac cctcgtctct 360
cctcacnctc catttcattt ctgggaattg ggcttagtt tcgaaccttt ggcaaggctg 420
ttcttactaa tgcccaagcc cctttacccc tctccctata ggttacacag gggagaccag 480
ggcctcggca gaagactgct gccacacttc cgaatcattc tgcttgccaa ataggtcatc 540
ttcaccagtt gactgac 557

<210> 897
<211> 495
<212> DNA
<213> Homo sapien

<400> 897
ctggaatctc ctttgcaatc ccatctgata agattaaaaa gttcctcacg gagtcccatg 60
accgacaggc caaaggaaga gccatcacca agaagaagta tattggtatc cgaatgatgt 120
cactcacgtc cagcaaagcc aaagagctga aggaccggca ccgggacttc ccagacgtga 180
tctcaggagc gtatataatt gaagtaattc ctgataccc agcagaagct ggtggtctca 240
aggaaaacga cgtcataatc agcatcaatg gacagtccgt ggtctccgcc aatgatgtca 300
gcgacgtcat taaaagggaa agcaccctga acatggtggt ccgcaggggt aatgaagata 360
tcatgatcac agtgattccc gaagaaattg acccataggc agaggcatga gctggacttc 420
atgtttccct caaagactct cccgtggatg acggatgagg actctgggct gctggaatag 480
gacactcaag acttt 495

<210> 898
<211> 406
<212> DNA
<213> Homo sapien

<400> 898
ccacgactgc atgcccgcgc ccgccaggtg atacctccgc cggtgaccca ggggctctgc 60
gacacaggga gtctgcatgt ctaagtgcta gacatgctca gctttgtgga tacgcggact 120
ttgttgctgc ttgcagtaac cttatgccta gcaacatgcc aatctttaca agaggaaacc 180
gtaagaaagg gcccagccgg agatagagga ccacgtggag aaaggggtcc accaggcccc 240
ccaggcagag atggtgaaga tggtcccaca ggccctcctg gtccacctgg tcctcctggc 300
ccccctggtc tcggtgggaa ctttgctgct cagtatgacg gaaaaggagt tggacttggc 360
cccggaccaa tgggcttaat gggacctaga ggcccacctg gtgcag 406

<210> 899

<211> 277
<212> DNA
<213> Homo sapien

<400> 899
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ccctcaggtc gctggagtgc accagtcttg gggaagaggt gcaggagaag ctgtgttttt 120
tatctccaca cgcagtatga agataaaatt acatagtatt acctagacat agacagtatt 180
acctaggtag atgcactgct cacctgcacc cttcccagct ctcatttttg ttaggtgatt 240
tgggataggg atagtgtttt ggggtatggg gggagtg 277

<210> 900
<211> 389
<212> DNA
<213> Homo sapien

<400> 900
ctgttttgaa atatttactg ttattaaaac ttgcttcaag ggaaattgtg aatatatttc 60
catatacaag cactagtaac agtaagtggc cctgtcatcc actaactcag gcaaagtaaa 120
gaatggcatt tttgaaggac attttacctc cccatatgat ttgattggct aggactttct 180
tctgtaaagt catacctttt cacatcttaa gtttttacat ttgccatttt ccaaatctca 240
attttgggca agaacgatat agtcacaact atggggctgc tttcaaaagc ggggctccat 300
ttctactgtc agatcaatgt ggtgctgtaa ccatcttttt atccctacct tcaagaacct 360
ccttatatga agcctgtctt tatccatca 389

<210> 901
<211> 453
<212> DNA
<213> Homo sapien

<400> 901
ctggagacac ccacttgggt ggagaagatt ttgacaaccg aatggtcaac cattttattg 60
ctgagtttaa gcgcaagcat aagaaggaca tcagtgagaa caagagagct gtaagacgcc 120
tccgtactgc ttgtgaacgt gctaagcgta ccctctcttc cagcacccag gccagtattg 180
agatcgattc tctctatgaa ggaatcgact tctatacctc cattacccgt gcccgatttg 240
aagaactgaa tgctgacctg ttccgtggca ccctggaccc agtagagaaa gcccttcgag 300
atgccaaact agacaagtca cagattcatg atattgtcct ggttggtggt tctactcgta 360
tccccaagat tcagaagctt ctccaagact tcttcaatgg aaaagaactg aataagagca 420
tcaaccctga tgaagctgtt gcttatggtg cag 453

<210> 902
<211> 293
<212> DNA
<213> Homo sapien

<400> 902
cctccggccg cccccacggc tcccatggcc tcttcctgcg ctaccgtgtg gaggccctaa 60
ccctgcgtgg catcaatagc ttccgccagt acaagtatga cctggtggca gtgggcaagg 120
ctttggaggg catgttccgc aagctcaacc acctcctgga gcgcctgcac cagtccttct 180
tcctctactt gctccccggc ctctcccgct tcgtctccat tggcctctac atgcccgctg 240
tcggcttctt gctcctggtc cttggtctca aggctctgga actgtggatg cag 293

<210> 903
<211> 228

<212> DNA
<213> Homo sapien

<400> 903
ctggagactc tgggccagga gaagctgaag ctggaggcgg agcttggcaa catgcagggg 60
ctggtggagg acttcaagaa caagtatgag gatgagatca ataagcgtac agagatggag 120
aacgaatttg tcctcatcaa gaaggatgtg gatgaagctt acatgaacaa ggtagagctg 180
gagtctcgcc tggaagggct gaccgacgag atcaacttcc tcaggcag 228

<210> 904
<211> 388
<212> DNA
<213> Homo sapien

<400> 904
ccaagcgctc agatcggcaa ggggcaccag tcttgatctg cccagtgcac agccccacaa 60
ccaggtcagc gatgaaggta tcttcagtct cccccgaacg atgaggcacc atgacgcccc 120
aaccattggc ctgggccagc ttgcacgcct gaagagactc ggtcacggag ccaatctggt 180
tgactttgag caggaggcag ttgcaggact tctcgttcac ggccttggcg atcctctttg 240
ggttggtcac tgtgagatca tcccccacta cctggattcc tgcactggct gtgaacttct 300
gccaagctcc ccagtcatcc tggtcaaagg gatcttcgat agacaccact gggtagtcct 360
tgatgaagga cttgtacagg tcagccag 388

<210> 905
<211> 272
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(272)
<223> n = A,T,C or G

<400> 905
ccggagccca cggnggtcat ggctgccaga gcgctctgca tgctggggct ggtcctggcc 60
ttgctgtcct ccagctctgc tgaggagtac gtgggcctgt ctgcaaacca gtgtgccgtg 120
ccagccaagg acagggtgga ctgcggctac ccccatgtca cccccaagga gtgcaacaac 180
cggggctgct gctttgactc caggatccct ggagtgcctt ggtgtttcaa gcccctgcag 240
gaagcagaat gcaccttctg aggcacctcc ag 272

<210> 906
<211> 525
<212> DNA
<213> Homo sapien

<400> 906
ctgtgcaccc gagtgtcctt tccccccctaa gctggcacat aggagcaaaa gttcactaac 60
cctgcagtgg aaggcaccaa ttgacaacgg ttcaaaaatc accaactacc ttttagagtg 120
ggatgaggga aaagaaatag tggtttcaga cagtgcttct tcgggagcca gaagcactgc 180
aagttgacaa agctttgtcc ggcaatgggg tacacattca ggctggccgc tcgaaacgac 240
attggtacca gtggttatag ccaagaggtg gtgtgctaca cattaggaaa tatccctcag 300
atgccttctg caccaaggct ggttcgagct ggcatcacat gggtcacgtt gcagtggagt 360
aagccagaag gctgttcacc cgaggaagtg atcacctaca ccttggaaat tcaggaggat 420
gaaaatgata accttttcca cccaaaatac actggagagg atttaacctg tactgtgaaa 480

aatctcaaaa gaagcacaca gtataaattc aggctgactg cttct 525

<210> 907
<211> 365
<212> DNA
<213> Homo sapien

<400> 907
gtaaatttta agtctttcag ttttatagat acggaaaaca agggtgactc tttaccacag 60
gatgaataaa gaactaagta atatgggaaa tgcagcaatt tctggactag ctgagccgat 120
tccttcctgt gagcacactg taagctttca agttctctgg gcaggaatta cagcacctgt 180
cccctgcaat ggccctgctg tgtgatgctc atcgcttccc ttcgtgctgg agcagtcccc 240
caggtgtcca tctcctatct ttttgttcca atcttctgtg agttccagct agcaggcttt 300
acatctgggg aaaggaaaac caggggtttt agctctgttc tctgctccca tccttcgctc 360
accag 365

<210> 908
<211> 608
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(608)
<223> n = A,T,C or G

<400> 908
cggaggtgcc tcagccatgg catggatccc tctcttcctc ggcgtccttg cttactgcac 60
aggacgtgcg gcctcctttg aggtgaccca gccaccttca atgtccgtgt ccccaggaca 120
gacagccaag atcacctgca ctggagatag gttgggggat gaatatgttt gctggtatca 180
acagaagcca ggccagtccc ctgtattgat aatatatttg gataacaagc ggccctcggg 240
gatccctgac cgattctctg cctacgcctc tgggaacaca gccactctga tcatcagcgg 300
ggcccaagtt atggatgagg cttattatta ctgtcaggcg tgggacggca gaactgtggt 360
gttcggcgaa gggaccaacc tgaccgtcct aggtcagccc aaggctgccc cctcggtcac 420
tctgttcccg ccctcctctg aggagcttca agccaacaag gccacactgg tgtgtctcat 480
aagtgacttc tacccgggag ccgtgacagt ggcctggaag gcagatagca gccccgtcaa 540
ggcgggagtg gagaccacca caccctccaa acaaagcaac aacaagtacg cggncagcag 600
ctatctga 608

<210> 909
<211> 513
<212> DNA
<213> Homo sapien

<400> 909
ctggtctcaa actcctcacc tcaactgatc cgcccacctt ggcctcccaa agtgctggga 60
ttataggtgt gagccaccgt gcccaaagtt aagtattttt gatcaagtgt tttgtctttt 120
gtgcaaggca tttgtggctc tgtcatagca gaggaaaaca aaacatgcct atcaaatgaa 180
tcaagtccga cctcttctca tattgagcaa ctagaggtct aggaacattt cccctacctg 240
tcattctcat ctggcatacc aggtgtacat actccttctt attctcctct gttaccaaga 300
tgttggcccc attgggtttg aggtcacgaa ctccacaaac tccaaactct tggacctcag 360
tgctgaaggt gaggtcatag cctagtgtgg agacatcatt ttccagcaga taaaccagac 420
cttggtagaa gtggtaatct tcactctcca tatctgtata tctgactgac ttgcccaaga 480
tgtgtttgta aaaggatcga gtaaagtagc act 513

<210> 910
<211> 272
<212> DNA
<213> Homo sapien

<400> 910
ccggagccca cggtggtcat ggctgccaga gcgctctgta tgctggggct ggtcctggcc 60
ttgctgtcct ccagctctgc tgaggagtac gtgggcctgt ctgcaaacca gtgtgccgtg 120
ccagccaagg acagggtgga ctgcggctac ccccatgtca cccccaagga gtgcaacaac 180
cggggctgct gctttgactc caggatccct ggagtgcctt ggtgtttcaa gcccctgcag 240
gaagcagaat gcaccttctg aggcacctcc ag 272

<210> 911
<211> 263
<212> DNA
<213> Homo sapien

<400> 911
cctgcaggta caaattgacc aggctgttga cggctgcctc cacgtcggtg gaataattct 60
gacgaatctg ggagctcatg gttggttggc aagaaggagc taaccacaaa aacggtgctg 120
gcaggtccca gaagcaggag atggccgaga agatggtccc ggaggttgca agcggagagg 180
aaatcggagg gcggtcggag gctggaagag agtccccgga tctgttccgt ccaaacactg 240
ttgaagcaag agacagaccc gcg 263

<210> 912
<211> 470
<212> DNA
<213> Homo sapien

<400> 912
ctgtgagcac cagcccaacc ctacctcttt aaaaagaaaa aacacaagtc cactctgaag 60
tcagcctctg taacctcccc acaagaaaac cgttttacat cagtcactaa ccaaacaacc 120
aacagtgctt caacacagaa agtaaagcat tatccagggc ttggactgtc tttcaagaaa 180
gccccaaatc ccctggcagg aggaagtcac agcagtgaag ccccatccca ggcccagttg 240
ttcccacgaa acacaccacg tggagaccca gcatgactgc cgactgattc caagtcccca 300
ggagggcttt atttttctt ttcaacatcc tgttctgcgg cttccttggc actttttgcc 360
cgtatgccga agagccgggc gttggcacgg gccatacgga gactagcgaa ggctttgaaa 420
ttcttctctt cctcagtgat gactcgagct ttctccttct tatagacgtt 470

<210> 913
<211> 426
<212> DNA
<213> Homo sapien

<400> 913
cctggacacc ataaggctgg tgggctttca gaattgtgtt agggggggcag gagtggcagg 60
ttcctgaatc tcggtcaata tagtaaccag caggacaaga ggtgcaggag gagcccacat 120
cagaggcttc tagggcacag ggacggcagt aggaggccac gccattcata acattggtga 180
cattgatgga gtagatcttg gcaacgtcat tggtgtactt cctgcttgcc tcatgaaaag 240
tggtcctctg gaaggcccag gtgaggctcg tggtagtgtt ctcctcaatg atgtaggtat 300
aggactgttt gcctttggaa cctttccacg tctccacagg agtgttggtc ctagaattca 360
cacccaccat gaagtagagc tcacagttca cagaacagag ggtctcaaag acaaatgtga 420
ttctgg 426

<210> 914
<211> 252
<212> DNA
<213> Homo sapien

<400> 914
ccaagctggg ggtgcgcaca tgtggaagaa ctggaggccc ggtgtcatga gcagaggctg 60
taccctagat gcccgcccca gtgccagcca acccaagaca ggagaaagag tttggcagtt 120
tcgcctctga ggaatacatg cctggccctc ctgtgaggtg aggcggtagg ggggaaggcg 180
caggctccga agtctgaggg cttgccggag ggggagtttc tgagcctttt gcatgggtgc 240
atgccccctg cc 252

<210> 915
<211> 234
<212> DNA
<213> Homo sapien

<400> 915
ccactgggac tttggcttcc tgatgccgat tgtggatttc tgctgcaaag acagtgatgt 60
tgagccaggc tgtttcctct ctatccagag gttttgtagt tttaataaaa ccatcctctg 120
gattaatagt gaaaaatctg tcgaggtcag tgtgacgatc gatggaatac cttatcgggc 180
tgttggcagc atcagggtct ttggcatgca ctctcccaac cacggtgcca gcag 234

<210> 916
<211> 366
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(366)
<223> n = A,T,C or G

<400> 916
ccattcagtc tcanttcaga aaattccaga agaagaaggc tgggtctcag tcctagtggg 60
agaacccccct cctagtccac ctgaaaacac caaattcaac catcatctgt caagaaatta 120
aaagaacaac accctagaga gaagtcatcc acacacaatc cacacacgca tagcaaacct 180
ccaatgcatg tacagaaacc tgtgatattt ataccccttgt aggaaggtat agacaatgga 240
attgtgagta gcttaatctc tatgtttctc tccattttca ttcctcctgc aactattttc 300
cttgatgttg taataaaatg aagttacgat gagtgatnaa aaaaaaaaaa aaaaaaaaaa 360
aaaaaa 366

<210> 917
<211> 492
<212> DNA
<213> Homo sapien

<400> 917
ggcacagcga gggcagcatc tggaggagct ctgcagcctc cacacctacc acgacctccc 60
agggctgagc tcaggaaaaa ccagccactg ctttacagga caggggggttg aagctgagcc 120
ccgcctcaca cccacccccca tgcactcaaa gattggattt tacagctact tgcaattcaa 180
aattcagaag aataaaaaat gggaacatac agaactctaa aagatagaca tcagaaattg 240
ttaagttaag ctttttcaaa aaatcagcaa ttccccagcg tagtcaaggg tggacactgc 300

acgctctggc atgatgggat ggcgaccggg caagctttct tcctcgagat gctctgctgc 360
ttgagagcta ttgctttgtt aagatataaa aaggggtttc tttttgtctt tctgtaaggt 420
ggtcttccag cttttgattg aaagtcctag ggtgattcta tttctgctgt gatttatctg 480
ctgaaagctc ag 492

<210> 918
<211> 557
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(557)
<223> n = A,T,C or G

<400> 918
ctgctcctgg gtaggcgtgc gggccatatc gtaggggtag gatactagcc gctcgccgcc 60
gttcagattt gctcccagca cgaaggggtt cttctccatc caggcaatga tggcccggac 120
ctccgtggat accgtggcat ctggcgaaag gtagcgttca gggatgggca agttattgtt 180
ggggacccgg taggggaccc atttcctctc ctcagctccc cagagcacag agttgagatc 240
cgggaaatct tcaaagatgt caaagccctc ctcagtccac agtcccagcg cccagttccc 300
aaactctgag cccatctgcg ctgccacctc gtagccatca gggttcagtg agggcaccag 360
gtggatgcgt gtgtcctgca ccaggctgcg cacacgtggg ttcccatcgc ggtactctcg 420
gcacaggtac tgcatgagca gcagcaacag ctctcggccc agcacctcgt tgccatggat 480
cccagcagtg tagcggaact cgggctcccc cagttcatgc tccccanggt tgtctgagat 540
ctccatggca tagatct 557

<210> 919
<211> 407
<212> DNA
<213> Homo sapien

<400> 919
ccttatgact acaacggccc acgagaaaaa tatggaatcg ttgattacat gatcgagcag 60
tccgggcctc cctccaagga gattctgacc ctgaagcagg tccaggagtt cctgaaggat 120
ggagacgatg tcatcatcat cggggtcttt aagggggaga gtgacccagc ctaccagcaa 180
taccaggatg ccgctaacaa cctgagagaa gattacaaat ttcaccacac tttcatcaca 240
gaaatagcaa agttcttgaa agtctcccag gggcagttgg ttgtaatgca gcctgagaga 300
ttccagtcta agtatgagcc ccggagccac atgatggacg tccagggctc cacccaggac 360
tcggccatca aggacttcgt gctgaagtac gccctgcccc tggttgg 407

<210> 920
<211> 340
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(340)
<223> n = A,T,C or G

<400> 920
cctcttgggc agcnnagggc cctgcctctg tttcatgatg catgggtcat ttgtcttggg 60
tgtcctatcc catatggaga agaaaggggc tctaagttct ggctcttctt tctttggggt 120

tctctgtacc tgaggaaacc aggccctggg tgactttgca gatctgctca ccctcggtga 180
gcaacagtgt cagccatgca agcaggacag aatggtgact gggtgccctt ggtgagctgt 240
gtatttccta ggaggtagaa aactgtggga aactgtggct aataaaaact aagtgtgagc 300
gtcnaaaaaa aaaaaaanna aaaanaaaaa aagcttgtac 340

<210> 921
<211> 571
<212> DNA
<213> Homo sapien

<400> 921
ggaaaaataa ttttattcct caaatgatca gcacattcag aagcaggaca gaggagctct 60
gatgacatct ctgggggact caaagcggcc ctcattttct ggtattttcc caggtgattc 120
tcttccaacc tgtgagtcct gctctctttc ctcccatctg aagtttgaga catcctctgc 180
cacaaggaaa gccaccaata ccagcccaaa gagccaccag agaggaacca aaccacatgc 240
atcaagttat aggaaggatg caagaaggga aattaggaag gaaagggagg agtttagttg 300
gcattctggg gcatgctaac atgagggcga tggtctctct ccaagtcgct ggacatatcc 360
cttttctttc caggtgctcc aactccaatt gcagtttggg ggaacgtgtg aaacttgttg 420
aagtcctgcg tgtatgtgcc cagcatgcaa gtactcagat taccgcaccg cttagatctg 480
gggctgtcca ggctggagcc ctctctctct tgctcctgct ccagctcact ggccttcatc 540
tgcacatagt cctgcaccag tgcagccagc a 571

<210> 922
<211> 262
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(262)
<223> n = A,T,C or G

<400> 922
gcccaanaca tncaggtcac agcagattcg ggcacgtgtg gaagaaggtt ggatgatgtc 60
atccacaaac cctcgcactg ctgcagggaa agggttggca aacttctcga tgtactctgc 120
ctgancagct tccacattct catgcccttt gaagatgatc tccacagcgc cctttgctcc 180
catgactgca atctctgngg tgggccangc atanttggta tcaccacaaa ngtgcttaga 240
gctcatgaca tcntaggcac ct 262

<210> 923
<211> 234
<212> DNA
<213> Homo sapien

<400> 923
ccactgggac tttggcttcc tgatgccgat tgtggatttc tgctgcaaag acagtgatgt 60
tgagccaggc tgtttcctct ctatccagag gttttgtagt tttaataaaa ccatcctctg 120
gattaatagt gaaaaatctg tcgaggtcag tgtgacgatc gatggaatac cttatcgggc 180
tgttggcagc atcagggtct ttggcatgca ctctcccaac cacggtgcca gcag 234

<210> 924
<211> 152
<212> DNA
<213> Homo sapien

<400> 924
ccaggattga caggccatcc attcacagcc aggagatgct gggccagttc ctccaagagg 60
tctccgtcat ggcagtgatg aaaacctaac agggtggccc cctgtgccag ctcaggtgac 120
tggagcccga gggcctgaca ggttcccagc ag 152

<210> 925
<211> 400
<212> DNA
<213> Homo sapien

<400> 925
caatatcatg ccaaggaccc aaacaacctc ttcatggtgc gcttggcaca gggcctgaca 60
catttaggga agggcaccct taccctctgc cctaccaca gcgaccggca gcttatgagc 120
caggtggccg tggctggact gctcactgtg cttgtctctt tcctggatgt tcgaaacatt 180
attctaggca aatcacacta tgtattgtat gggctggtgg ctgccatgca gccccgaatg 240
ctggttacgt ttgatgagga gctgcggcca ttgccagtgt ctgtccgtgt gggccaggca 300
gtggatgtgg tgggccaggc tggcaagccg aagactatca cagggttcca gacgcataca 360
accccagtgt tgttggccca cggggaacgg gcagaattgg 400

<210> 926
<211> 521
<212> DNA
<213> Homo sapien

<400> 926
ccacgtccct attttagaaa tgagaggagt gactgcacac aggaaaaatg ccacttttag 60
caattcaaag tggaaaaact tcttttatat aaaaattatc ccaactccca ccccttggct 120
ctcagtgttg catctcccac agaggtaaag ttgtgccatt ttcccacggc tttaaacaaa 180
gcaaaacaaa accaccaatc ctaataaccc ccctccctgc cccgtctcca cgctgtgcgg 240
agagggctct agcccctcag tcggacttct ccttctcctt catgtgcaag aagacgatgc 300
tgaagatgaa gagccccagc atcatggaga aggcgctggc gtagtagggg taggccgagg 360
ggatgaagcg ctcatactgc gtgtgctgga gtggccgcac ggatacctga gtggaagagt 420
acaggtgtgt gtagcctagc cggttgtaat ccactttaaa ctggaataca ccatacacgt 480
cgggcaactt gaactgaaca ctgtatttgc cacctttctt c 521

<210> 927
<211> 520
<212> DNA
<213> Homo sapien

<400> 927
ccaggctagt ctcgaactcc tgacctcagg tgatctgcct gcctcggcct cccaaagtgc 60
tgggattacc ggcgtgagcc accatgcctg gccttacatt ttttaaaatg agggaacaaa 120
tgaataaatg accaccatgt taggggctgg ctctgaacag aattgtaaag tgggccaagc 180
ttgctctcaa ggtcacctta agcccacggt tgctgtgtcc tgccctctca gggtcatttc 240
ccagcctcca ggcacctgtt cacagaggct gcatctggcc tcgcctccac ccctccatcc 300
taaggtgctc cgctgactta gaacaggaca gtcagggaga gaatgtgtct caggagggtg 360
gagtcagatg atcacggcct tcctggcatc tgaggggata cagcttcggg tagcaaagtg 420
tgattttccc tgagccccag gaaagcttgg ccttggtcag aatacattga accctgaggg 480
ccagagagtc cctggggcaa gctctgagag ggaggacctc 520

<210> 928
<211> 492

<212> DNA
<213> Homo sapien

<400> 928
ctgagctttc agcagataaa tcacagcaga aatagaatca ccctaggact ttcaatcaaa 60
agctggaagt ccaccttaca gaaagacaaa aagaaacccc tttttatatc ttaacaaagc 120
aatagctctc aagcagcaga gcatctcgag gaagaaagct tgcccggtcg ccatcccatc 180
atgccagagc gtgcagtgtc caccccttgac tacgctgggg aattgctgat tttttgaaaa 240
agcttaactt aacaatttct gatgtctatc ttttagagtt ctgtatgttc ccattttttta 300
ttcttctgaa ttttgaattg caagtagctg taaaatccaa tctctgagtg catgggggtg 360
ggtgtgaggc ggggctcagc ttcaaccccc tgtcctgtaa agcagtggct ggtttttcct 420
gagcccagcc ctgggaggtc gtggtaggtg tggaggctgc agagctcctc cagatgctgc 480
cctcgctgtg cc 492

<210> 929
<211> 209
<212> DNA
<213> Homo sapien

<400> 929
tttttttcacc atctaacaaa ggcactttat tgcattacca ttcacaatta acagtcaaga 60
acaaataata ataacaaata aaataacttt taagaggaca aggcattaga aataaaaaag 120
gacactaata acatttgtaa aagcttgtac tggatgtggt tgccccccatt tgtgtgtgtg 180
gttgtgtgtg tgtggttgtg tgttggtgg 209

<210> 930
<211> 617
<212> DNA
<213> Homo sapien

<400> 930
cgcgtccttt aacaagcccc gttctcaaaa ggctgggggt atttatataa gaacttattc 60
caaagtgact ctaagatcca tgttcccaag atctagtacg ggctattcat ggttctgagg 120
catgtccagc atgcaggcaa acttatctgt tcaaattgag gtaaaacaga caaaaaacac 180
ttaatattaa cagaagctac ataattaaaa ctaaccttct gctgcttatt taagctaatg 240
atgtattctt accaaacaga gaccctcaag tcaatcattt cttttgattt tagttaccac 300
ccccaaatta agcctcttct ttcaaagcca ttattagtta aaaaaaagtt ttaaaatgaa 360
gaaaaatatt ttttccagaa cttgtatttt gtaattagtg tgatgcaatt tctttttatt 420
tttcaaactt agaaataact catgtatggt actatttggt atttttttca gataccaagg 480
aataccgaca ggattcataa ataggatttt ctgacactgg caggaaagtc tgctaacgtt 540
tacaaaatac caaagactct tctttcaagc ttcaaagatg gctgagaatt aacagttatg 600
attagttttt cagtaca 617

<210> 931
<211> 521
<212> DNA
<213> Homo sapien

<400> 931
ccaacaaaat tggtgaacac atggaagaac atggcatcaa gtttataaga cagttcgtac 60
caattaaagt tgaacaaatt gaagcaggga caccaggccg actcagagta gtagctcagt 120
ccaccaatag tgaggaaatc attgaaggag aatataatac ggtgatgctg gcaataggaa 180
gagatgcttg cacaagaaaa attggcttag aaaccgtagg ggtgaagata aatgaaaaga 240
ctggaaaaat acctgtcaca gatgaagaac agaccaatgt gccttacatc tatgccattg 300

gcgatatatt ggaggataag gtggagctca ccccagttgc aatccaggca ggaagattgc 360
tggctcagag gctctatgca ggttccactg tcaagtgtga ctatgaaaat gttccaacca 420
ctgtatttac tcctttggaa tatggtgctt gtggcctttc tgaggagaaa gctgtggaga 480
agtttgggga agaaaatatt gaggtttacc atagttactt t 521

<210> 932
<211> 197
<212> DNA
<213> Homo sapien

<400> 932
ccttgtgacc aattacatat gattaaaatt acttcccaca ttcacatcca cagtactcgt 60
ccaccattta acatctcaac caaaacgtta cacatgtgaa acaatcacta acaggcaaaa 120
atactaaacc tgtatatttg gtattgcaaa tacacttatg catgagcaag caagggattc 180
acagtgagaa tctacag 197

<210> 933
<211> 610
<212> DNA
<213> Homo sapien

<400> 933
cctcatttta acaatatctt ttttttgctc ttctgcttcc aaaccttatt tgccaatgta 60
atgcctttat ataaagttct tatgatgaat gaaaaacttt caagtgctgt tgcctcatta 120
aatgcattat ttattaattt aacttctagt actctcgata aagagccagt gaaatgagtt 180
attgagttcc agggaaaaaa atgagaacat aattttgaat ttattatctc tctatacaca 240
cacagttcat aattggatta catataataa taatatcaac aagtctatca gtatcgaagt 300
tggatactgg taatttctca tgtgaggctc ttgtgtcaca gtcagcatag atttctggag 360
catttgtctg ttgatctttt ggtggcctca aacctcatta agtggtgtgg gagatgctgt 420
ttctgccatg tgagaatgtg atggcagaat taacacaacc ccaccagggg tacaacagag 480
cactttacat ccaaaggcag agagggacac agcaatgcag aattccagca cacttaagag 540
gagcaccatg ccatccagac ccattaagat ggacatagtc ccatgacaat tatttgagtt 600
gccatagtag 610

<210> 934
<211> 384
<212> DNA
<213> Homo sapien

<400> 934
ctgctaccag gggagcgaga gctgactatc ccagcctcgg ctaatgtatt ctacgccatg 60
gatggagctt cacacgattt cctcctgcgg cagcggcgaa ggtcctctac tgctacacct 120
ggcgtcacca gtggcccgtc tgcctcagga actcctctga gtgagggagg agggggctcc 180
tttcccagga tcaaggccac agggaggaag attgcacggg cactgttctg aggaggaagc 240
cccgttggct tacagaagtc atggtgttca taccagatgt gggtagccat cctgaatggt 300
ggcaattata tcacattgag acagaaattc agaaagggag ccagccaccc tggggcagtg 360
aagtgccact ggtttaccag gcag 384

<210> 935
<211> 125
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(125)
<223> n = A,T,C or G

<400> 935
nttaaaattc atggaagtaa tannacagta ataaaatatg gatactatga aaactgacac 60
acagaaaaac ataaccataa aatattgttc caggatacag atattaatta agagtgactt 120
cgtta 125

<210> 936
<211> 546
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(546)
<223> n = A,T,C or G

<400> 936
gcccatgcca gcgtgtggtc agcacgcaca acttgtggct gctgtccttc ctgaggaggt 60
ggaatgggag cacagccatc acagacgata ccctgggtgg cactctcacc attacgctgc 120
ggaatctaca accccatgat gcgggtctct accagtgcca gagcctccat ggcagtgagg 180
ctgacacccct caggaaggtc ctggtggagg tgctggcagg ttctcccgcc aaggttctcc 240
ccctgcctcg aggaggaagg ggctggaggc tcatggctct gcctcccata gaccccctgg 300
atcaccggga tgctggagat ctctggttcc ccggggagtc tgagagcttc gaggatgccc 360
atgtggagca cagcatctcc aggagcctct tggaaggaga aatccccttc ccacccactt 420
ccatccttct cctcctggcc tgcatctttc tcatcaagat tctagcagcc agcgccctct 480
gggctgcagc ctggcatgga cagaagccag ggacacatnc acccagtgaa ctggactgtg 540
gacctc 546

<210> 937
<211> 550
<212> DNA
<213> Homo sapien

<400> 937
caccaatcaa aattcctgtt ggtcctgaga ctttgggcag aatcatgaat gtcattggag 60
aacctattga tgaaagaggt cccatcaaaa ccaaacaatt tgctcccatt catgctgagg 120
ctccagagtt catggaaatg agtgttgagc aggaaattct ggtgactggt atcaaggttg 180
tcgatctgct agctccctat gccaagggtg gcaaaattgg gctttttggt ggtgctggag 240
ttggcaagac tgtactgatc atggagttaa tcaacaatgt cgccaaagcc catggtggtt 300
actctgtgtt tgctggtgtt ggtgagagga cccgtgaagg caatgattta taccatgaaa 360
tgattgaatc tggtgttatc aacttaaaag atgccacctc taaggtagcg ctggtatatg 420
gtcaaatgaa tgaaccacct ggtgctcgtg cccgggtagc tctgactggg ctgactgtgg 480
ctgaatactt cagagaccaa gaaggtcaag atgtactgct atttattgat aacatctttc 540
gcttcaccca 550

<210> 938
<211> 192
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(192)
<223> n = A,T,C or G

<400> 938
tttttttttt tttttttttt tttttttngg aaaaagccca aaaggcactt tattggaggt 60
ctntgcctcc attcacagga aaaaggagct gggagcccca tcctaagggt cccagcatca 120
gcccactgga gggcctggaa cagtccanca ctntgtggga aaggagtggg gaggggaatg 180
ttttaaaaaa aa 192

<210> 939
<211> 337
<212> DNA
<213> Homo sapien

<400> 939
ccaaaatatt ggaacacaca gaaccaaacc aggtgtgttc tacacctgca tgagtgaagg 60
atttccacgt agacacctag gaagagcccg catgccctag actcactcca gaggaaggat 120
tgatttgcaa ccagaaaggg agctgaaaac cacggagctc catggctctt cattcaaaag 180
ggaaaataat gattccacgt tgctttttag agttcaaatc aacatctttc tggataaatc 240
tatttttaa caatcttttt attatttgta aaagatataa aaacaactcc catcagtagc 300
aatacaaggt tatacatttt aaccagattt tctcagg 337

<210> 940
<211> 362
<212> DNA
<213> Homo sapien

<400> 940
cctgtccaaa cgtgcgcacc aggaccgagg ggagctccct cccaacacct gctaggaatt 60
gccaactttt aaatggatgg ggttttttat gggttgaacc tctgttaata cttttgtaca 120
ctctcactac agtttatatt tttataggct attttctcaa ggtgtttcta gattccacat 180
atctatttta tataacaagt tattatgtta tgtgtgtgac tcccttgtgt gtatctgtgc 240
cagcctcagc ctccgagttg cttttccctc tggccctgac tctcactgac tcaccgatgt 300
ggtgtgcagg cccacttctt accccagata gcctcgggcg ctgcctgtag tcatgccgac 360
ag 362

<210> 941
<211> 216
<212> DNA
<213> Homo sapien

<400> 941
ctggacatct ttccagcccg ggatacctac catcctatga gcgagtaccc cacctaccac 60
acccatgggc gctatgtgcc ccctagcagt accgatcgta gcccctatga gaaggtttct 120
gcaggtaatg gtggcagcag cctctcttac acaaacccag cagtggcagc cacttctgcc 180
aacttgtagg ggcatgtcgc ccgctgagct gagtgg 216

<210> 942
<211> 324
<212> DNA
<213> Homo sapien

<400> 942

ctgattggct tcaggccccc tacctctata aactctacca gcattactac ttcctggaag 60
gtcaaattgc catcctatat gtctgtggcc ttgcctctac agtcctcttt ggcctagtgg 120
cctcctccct tgtggattgg ctgggtcgca agaattcttg tgtcctcttc tccctgactt 180
actcactatg ctacttaacc aaactctctc aagactactt tgtgctgcta gtggggcgag 240
cacttggtgg gctgtccaca gccctgctct tctcagcctt cgaggccagg gagcctcaaa 300
tcttcagtct ctcagagacc acag 324

<210> 943
<211> 597
<212> DNA
<213> Homo sapien

<400> 943
ctgacaaaat tcctgggtta ctaggtgtct ttcagaagct gattgcatcc aaagcaaatg 60
accaccaagg tttttatctt ctaaacagta taatagagca catgcctcct gaatcagttg 120
accaatatag gaaacaaatc ttcattctgc tattccagag acttcagaat tccaaaacaa 180
ccaagtttat caagagtttt ttagtcttta ttaatttgta ttgcataaaa tatggggcac 240
tagcactaca agaaatattt gatggtatac aaccaaaaat gtttggaatg gttttggaaa 300
aaattattat tcctgaaatt cagaaggtat ctggaaatgt agagaaaaag atctgtgcgg 360
ttggcataac caaattacta acagaatgtc ccccaatgat ggacactgag tataccaaac 420
tgtggactcc attattacag tctttgattg gtctttttga gttacccgaa gatgatacca 480
ttcctgatga ggaacatttt attgacatag aagatacacc aggatatcag actgccttct 540
cacagttggc atttgctggg aaaaaaagag catgatcctg taggtcaaat ggtgaat 597

<210> 944
<211> 359
<212> DNA
<213> Homo sapien

<400> 944
ctggaagagg aaaaggagat actgcagaaa gaactctctc aacttcaagc tgcacaggag 60
aagcagaaaa caggtactgt tatggatacc aaggtcgatg aattaacaac tgagatcaaa 120
gaactgaaag aaactcttga agaaaaaacc aaggaggcag atgaatactt ggataagtac 180
tgttccttgc ttataagcca tgaaaagtta gagaaagcta aagagatgtt agagacacaa 240
gtggcccatc tgtgttcaca gcaatctaaa caagattccc gagggtctcc tttgctaggt 300
ccagttgttc caggaccatc tccaatccct tctgttactg aaaagaggtt atcatctgg 359

<210> 945
<211> 367
<212> DNA
<213> Homo sapien

<400> 945
caggatctga agtttggggt cgagcaggat gttgatatgg tgtttgcgtc attcatccgc 60
aaggcatctg atgtccatga agttaggaag gtcctgggag agaagggaaa gaacatcaag 120
attatcagca aaatcgggaa tcatgagggg gttcggaggt ttgatgaaat cctggaggcc 180
agtgatggga tcatggtggc tcgtggtgat ctaggcattg agattcctgc agagaaggtc 240
ttccttgctc agaagatgat gattggacgg tgcaaccgag ctgggaagcc tgtcatctgt 300
gctactcaga tgctggagag catgatcaag aagccccgcc ccactcgggc tgaaggcagt 360
gatgtgg 367

<210> 946
<211> 335
<212> DNA

<213> Homo sapien

<400> 946
ccacagaggt ggtattacaa aatatacaaa gtggtttctt tctttacatt tcatagaaga 60
agcctgcctc atttccaaat gagagcacta gaagcacaaa tcatgcagac catttactat 120
ataacttatg aaaaatgctg tacagggctg tgactataga tatagagtat ttggctctgt 180
ttgggaattg atatctacaa gggggagggt caggggagga ctgtccgata tcctgacttg 240
ctgggatggt ggagaagctg ggatgggga ggccccaatc ttgctgcacg gctacaccca 300
ctcctccttt cctagacaag gctggagcgc actgg 335

<210> 947
<211> 384
<212> DNA
<213> Homo sapien

<400> 947
cctcttggag cacatccttt actgcattgt ggacagcgag tgtaagtcaa gggatgtgct 60
ccagagttac tttgacctcc tgggggagct gatgaagttc aacgttgatg cattcaagag 120
attcaataaa tatatcaaca ccgatgcaaa gttccaggta ttcctgaagc agatcaacag 180
ctccctggtg gactccaaca tgctggtgcg ctgtgtcact ctgtccctgg accgatttga 240
aaaccaggtg gatatgaaag ttgccgaggt actgtctgaa tgccgcctgc tcgcctacat 300
atcccaggtg cccacgcaga tgtccttcct cttccgcctc atcaacatca tccacgtgca 360
gacgctgacc caggagaacg tcag 384

<210> 948
<211> 173
<212> DNA
<213> Homo sapien

<400> 948
ctgtggaggg gacactgtct ttgaggcatc actggttcca caaagggtag ggaaggtct 60
tgagggacca ccccatgccc tcattaatca accagaagct tggcctggag cagcagcggg 120
gattccagta gctgtgggca tacaggatgc tagggcggcc acaacccagg cag 173

<210> 949
<211> 211
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(211)
<223> n = A,T,C or G

<400> 949
ccatccacgt tgnnaaacag aataaaatgg aaattcacct tgtcatctac ccgacattgg 60
ccttcctgtg ccacggcatc atgggctgcc tgtatggcct cattcttttc aaagcatttt 120
gctctgtctt caggggacat tttctctgtt tcagaaagaa actgtttcag aactgatcca 180
tcctcaaatc ccagtttgtc ttgattattg g 211

<210> 950
<211> 382
<212> DNA
<213> Homo sapien

<400> 950
cctcatcgtg agtcaggacg tggtgaaagc tgcagtggct gctgtgctct ctccagaaga 60
attcatggtc ctgttggact ctgtgcttcc tgagagtgcc catcggctga agtcaagcat 120
cgggctgatc aatgaaaagg ctgcagataa gctgggatct acccagatcg tgaagatcct 180
aactcaggac actcccgagt tttttataga ccaaggccat gccaaggtgg cccaactgat 240
cgtgctggaa gtgtttccct ccagtgaagc cctccgccct ttgttcaccc tgggcatcga 300
agccagctcg gaagctcagt tttacaccaa aggtgaccaa cttatactca acttgaataa 360
catcagctct gatcggatcc ag 382

<210> 951
<211> 473
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(473)
<223> n = A,T,C or G

<400> 951
cctctctgcc aggcaaagga gggagctgcg gctctttgac attaaaccag agcagcagag 60
atacagcctt ttcctccctc tccatgaact ctggaaacag tacatcaggg acctgtgcag 120
tgggctcaag ccagacacgc agccacagat gattcaggcc aagctcttaa aggcagatct 180
tcacggggct attatttcag tgacaaaatc caaatgcccc tcttatgtgg gtattacagg 240
aatccttcta caggaaacaa agcacatttt caaaattatc accaaagaag accgcctgaa 300
agttatcccc aagctaaact gcgtgttcac tgtggaaacc gatggcttta tttcctacat 360
ttacgggagc aaattccagc ttcggtcaag tgaacggtct gcgaagaagt tcaaagcgaa 420
nggaacgatt gacctgtgaa ttctttgccg tctaangcag ttgtttatga cag 473

<210> 952
<211> 312
<212> DNA
<213> Homo sapien

<400> 952
ctgatgggtc tcatagtcct ctgggatggt gtcattgcag cggtaacgca ggttggccca 60
gatgatgttc tcctgggaga agcagaagac ccccaagcgg ccaccccgca tggttgtgtc 120
caagaccacg ttgctgtcgg ccaccagctc agggccctca tagaatcgca ccctgatgta 180
gcccacttgg ggccggtgct gcaggaacca acgataggac ttcttgtcct tccaacccac 240
gtttcgcggg tccttccaca gcagccgcac ctgagactct gtgtctcctg tatgccacag 300
agcgttccgc ag 312

<210> 953
<211> 397
<212> DNA
<213> Homo sapien

<400> 953
cgcgtccact gccgaccctc ttggtttctg aaaccaacct ttcttcctgc tctcctcttt 60
aagagcaaac cccaacatgt ataaggtcac agcaagtggt agccaggaaa agctgtggga 120
cccctcattt gagtcacatc catatggcat ggagaaagaa aacctctctg ccagaaggaa 180
ctgaactctg gaagtcctaa ggaaggtcac catgatcagc agataggaaa gcattgccaa 240
gggctgtccc tcaagagctt agttttctta gggagaccag aaagacatca gatcctgact 300

gccctgtttt gctcaagttc tgaaatgagt ggcatgatga agagctggtg gagctgaggg 360
aaagagtcaa ccatgtgggg tggggtagtg aggaagg 397

<210> 954
<211> 304
<212> DNA
<213> Homo sapien

<400> 954
cctttgtacc gggccagcaa ctggaagggc acagtgtgga attccagggc ctgcagagtc 60
ttcttctgga acagggcctc gtggctccag tacagggaca ggttgaactg cagctcaaag 120
agctcctcag ggagcatcat ggggaagcgg atcttctcca ccaagccctc cacctcctca 180
tgggaggcac gctcccccca gctccaggtg tccacggcct tcagtagggc cagctcgctg 240
ggcaccgcca ggtcgctcct gggcagcagc agttggagca ggtctgtggg gacactgggc 300
cagg 304

<210> 955
<211> 156
<212> DNA
<213> Homo sapien

<400> 955
ctgtttcaac tccctgccaa gaaaaatgta gatgcaattc tggaggagta tgcaaattgc 60
aagaaatcgc agggaaatgt tgataataag gaatatgcgg tcaatgaagt tgtggcagga 120
ataaaagaat atttcaatgt gatgttgggc actcag 156

<210> 956
<211> 543
<212> DNA
<213> Homo sapien

<400> 956
ctttcatctg accatccata tccaatgttc tcatttaaac attacccagc atcattgttt 60
ataaccagaa actctggtcc ttctgtctgg tggcacttag agtcttttgt gccataatgc 120
agcagtatgg agggaggatt ttatggagaa atggggatag tcttcatgac cacaaataaa 180
taaaggaaaa ctaagctgca ttgtgggttc tgaaaaggtt attatacttc ttaacaattc 240
ttttttcag ggactttct agctgtatga ctgttacttg accttctttg aaaagcattc 300
ccaaaatgct ctattttaga tagattaaca ttaaccaaca taattttttt tagatcgagt 360
cagcataaat ttctaagtca gcctctagtc gtggttcatc tctttcacct gcattttatt 420
tggtgtttgt ctgaagaaag gaaagaggaa agcaaatacg aattgtacta tttgtaccaa 480
atctttggga ttcattggca aataatttca gtgtggtgta ttattaaata gaaaaaaaaa 540
att 543

<210> 957
<211> 528
<212> DNA
<213> Homo sapien

<400> 957
ctgtgatcaa gatgtattaa aagaatatga aagagcatct gggttattct agaagttctg 60
tgatcaaaac atattaaaaa aaattaaagc gcatctgggt tattctagaa gttcctgggc 120
tttatacttg gatatttaca gaggaagttg aacttcaagt tctgccactc ttcaaaatgg 180
gtgacaggag aggacgtgat aggacagtta aaaaaaaatt gatagtcatt ctctgatgga 240
gtgaagcaag ctttgtcaac catcaacaaa tatgacttca ttggtcacaa gccctgcaga 300

gatccaacaa gatttgagtt ttaaatacag aacatatttc aaacagaacc agcagagtgc 360
tgatgtatga atggaattga ttgctgaagg cagagagtat aaagaatctc aagaaacttt 420
tagtgccatt ttcatttaat aagccattgg tatagcaacc taaaaacctt ggctgtgatg 480
acaccaggat gtgtttatgg aattgctgca ggagaacaca attggcag 528

<210> 958
<211> 451
<212> DNA
<213> Homo sapien

<400> 958
ctgtctgacc atggggacct tctgtctgaa gaggagctgg atgaatgaga ctctgggaat 60
catctacaca ggaccaaacc caacaggcgc cctggcaccg gggaggcggg tagttgtact 120
ctgcttgtac agtccttgag cccagtttac agatctggag agcaggaggc caggacaagg 180
acaaaggctg gaggatggag taggacccag gggctctgcc atcctaggca tcattcaagg 240
tcttttatga agactttaca gatgtcctct gtaagtagca tcgagagtgg agttcagctc 300
ctttctctac ttttttttgg tctgatggca catatttatt gttctgtggt ctaatcacag 360
tgtttctaaa tgtaaaaagt gcatatgttg gtgtagctag tcccgcgaca ttgagctcct 420
ctgcatgaag acactgggct cctgcatcca g 451

<210> 959
<211> 158
<212> DNA
<213> Homo sapien

<400> 959
ccagaccaag gctgctggac ctatgggaat attcgggtgt ctgtagagga tgtgactgtc 60
ctggtggact acacagtacg gaagttctgc atccagcagg tgggcgacat gaccaacaga 120
aagccacagc gcctcatcac tcagttccac tttaccag 158

<210> 960
<211> 235
<212> DNA
<213> Homo sapien

<400> 960
ctgagcaggg aatccggccg gaggaaggag cagcttaccg actgcgggtg ttcaccacag 60
gccaggccct aatatgcacc cactagttta gctcagactc ctctctacat atgaatggca 120
aaggcacttt tgatatacac tgtaaaatac actgtatttt agaatcggaa tctattttct 180
aatgttcccc tcaagggctg agtggcagga aggttgagga tgcaggactt tgcag 235

<210> 961
<211> 375
<212> DNA
<213> Homo sapien

<400> 961
cctggaaaga aaagggatat gtccagcgac ttggagagag accatcgccc tcatgttagc 60
atgccccaga atgccaacta aactcctccc tttccttcct aatttccctt cttgcatcct 120
tcctataact tgatgcatgt ggtttggttc ctctctggtg gctctttggg ctggtattgg 180
tggctttcct tgtggcagag gatgtctcaa acttcagatg ggaggaaaga gagcaggact 240
cacaggttgg aagagaatca cctgggaaaa taccagaaaa tgagggccgc tttgagtccc 300
ccagagatgt catcagagct cctctgtcct gcttctgaat gtgctgatca tttgaggaat 360
aaaattattt ttccc 375

<210> 962
<211> 409
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(409)
<223> n = A,T,C or G

<400> 962
ctggggaggc cccncgggcc tctcangtgg acaggtccag gcattggttg aagctggatg 60
aagctggggc ctnngctcct nctcatcaaa tacagatcac tgngaccctg tcctcctcca 120
tggtgctggt ctcctcggcc ccactgcccc tgcttctgct ttcttcctcc acctcctcct 180
cccccagctc catgtccagc tcgttgcctg cctctgaggg tgtgtaggtg gagccactga 240
tggaacggca gctaaagaag acgattcgct tgagccgctt gttgtagaag aagtagttga 300
aggaccagag gctaccatcc tccccgaagg gatctgagtc caagtctggg ttatagctgt 360
agatgtcaca ttcagccagg cagatctcct cgtccaccgc gttccacag 409

<210> 963
<211> 163
<212> DNA
<213> Homo sapien

<400> 963
gccatggcgt cctatttcga tgaacacgac tgcgagccgt cggaccctga gcaggagacg 60
cgaaccaaca tgctgctgga gctcgcaagg tcacttttca ataggatgga ctttgaagac 120
ttggggttgg tagtagattg ggaccaccac ctgcctccac cag 163

<210> 964
<211> 344
<212> DNA
<213> Homo sapien

<400> 964
ccactggctg agttattggc ctggcaggta tagagtccgc tgttcttctc agtgatgttg 60
gagataaaga gctcttgtgt gtgttgctgg atgttcccat caatcagcca agaatactgt 120
gcaggtgggt tagaggctgc atggcaggag aggctgaggt tcaccсctgg acggtaatag 180
gtgtatgagg gggaaatggt ggggtcgtct gggccataga ggacattcag gatgactggg 240
tcgctgtggt caacacttaa ttcgttctgg attccacact catagggtcc tacatcattc 300
cttgtgacac tgagtagagt gagggtcctg ttgtcattgg acag 344

<210> 965
<211> 461
<212> DNA
<213> Homo sapien

<400> 965
ctgagctttc agcagataaa tcacagcaga aatagaatca ccctaggact ttcaatcaaa 60
agctggaagt ccaccttaca gaaagacaaa aagaaacccc tttttatatc ttaacaaagc 120
aatagctctc aagcagcaga gcatctcgag gaaggaagct tgcccggtcg ccatcccatc 180
atgccagagc gtgcagtgtc cacccttgac tacgctgggg aattgctgat tttttgaaaa 240
agcttaactt aacaatttct gatgtctatc ttttagagtt ctgtatgttc ccattttta 300

ttcttctgaa ttttgaattg caagtagctg taaaatccaa tctttgagtg catgggggtg 360
ggtgtgaggc ggggctcagc ttcaaccccc tgtcctgtaa agcagtggct ggtttttcct 420
gagcccagcc ctgggaggtc gtggtaggtg tggaggctgc a 461

<210> 966
<211> 246
<212> DNA
<213> Homo sapien

<400> 966
cctttcacag acactaccat tgagtgggtt gatgcaggtt gcagccttca gtccccgagt 60
actgggttct gataaaattc cacagaatcc agcatcactg ggctcagacg gcatccactg 120
tagtaaacta tttgtaaatg gggacatatc ttcccagcac cagtaggaca cattgatctt 180
ccgaaggccg acccatgggg ttaaggtgag cttggacatg ctctgagatg actgcattat 240
tcgcag 246

<210> 967
<211> 244
<212> DNA
<213> Homo sapien

<400> 967
ctggagcatt ggcagggaca gtcagaaagg agacaagtga aaacggtcag atggacacag 60
gcggaggaga aaagacagag ggagagagac catcgggaac aatcagaggg gccgagacga 120
tcagaaaagg gtcagcccga gacaggctga gccagagttt ctagaagcag tttccaattc 180
aacggctcgc tttgagggcc aacgtgtcct aggccgaggc tgcagaagcg ctcacacact 240
cacg 244

<210> 968
<211> 436
<212> DNA
<213> Homo sapien

<400> 968
ccaaagtctt taccctattt aaccccttgt atatttctga ctgctcactg ttcatattat 60
aggggaccag atttgtaata tagaattctc cataacatga atgaaattaa tgctgtccaa 120
gccagcatgg tggcttcata ttaagtagta acagaagtct gaacaattgg ataaatttga 180
cttccaagac agctaaactt ttcaactgca attttaaaaa ctacactaca ctgttatagt 240
taatctgaca aaaatgtcct caaagagtac tttattttat ttaaagcatc tgtttaattc 300
aacctttaat aattttgcaa agaagggtac gtgtgtattt taatatagcc tgacctgaat 360
ttatatgttt ttagctttag tatttaactt tttgtaacaa ataaaccttt tttaaaacaa 420
gtttaaaaaa gaaaaa 436

<210> 969
<211> 383
<212> DNA
<213> Homo sapien

<400> 969
ctggctccct tgtctccagg gctttggagg atcagggtag ggagggctct gtctctaagc 60
caggtgtcag gatcagaatc atgggtagaa ggtgccattc agctcacagc cgcacccaga 120
atcctttgca gccctccttc tttatttttt tcccattgca ttctgggagt ccacatctgg 180
ctttctcagc cactgttcat caccaggggt tttaggagga aggcttggct cctgtcttcc 240
cagacccacc atgcctggag aggtcaggat ggaactacct cattcggcga attagcccca 300

aattgaacgc tgaatcgtgt cccatgagat caggcgccat ctgtaaagtc tcctctggaa 360
atgccaatcc atccttcccc cag 383

<210> 970
<211> 543
<212> DNA
<213> Homo sapien

<400> 970
ctgtagcttt tgtgggactt ccactgctca ggcgtcaggc tcaggtagct gctggccgcg 60
tacttgttgt tgctttgttt ggagggtgtg gtggtctcca ctcccgcctt gacggggctg 120
ctatctgcct tccaggccac tgtcacggct cccgggtaga agtcacttat gagacacacc 180
agtgtggcct tgttggcttg aagctcctca gaggagggcg ggaacagagt gaccgagggg 240
gcagccttgg gctgacctag gacggtcagc ctggtccctc cgccgaacac cgaagtgcta 300
ctgtttgtat atgagctgca gtaataatca gcctcgtcct cagcctggag cccagagatg 360
gtcagggagg ccgtgttgcc agacttggag ccagagaagc gattagaaac ccctgagggc 420
cgatcagtga catcataaat catgagtttg gggctttgc ctgggtgctg ttggtaccag 480
gagacatagt tataaaaacc aacgtcactg ctggttccag tgcaggagat ggtgatcgac 540
tgt 543

<210> 971
<211> 416
<212> DNA
<213> Homo sapien

<400> 971
ccagactgac ttcaaaaaat taatgtgtat ccagggacat tttaaaaacc tgtacacagt 60
gtttattgtg gttaggaagc aatttcccaa tgtacctata agaaatgtgc atcaagccag 120
cctgaccaac atggtgaaac cccatctgta ctaaacataa aaaaattagc ctggcatggt 180
ggtgtacgcc tgtaatccca gtgacttggg aggctgaggc aggagaatcg cttgaacccg 240
ggaggcggag gttgcagtga gctaagatcg caccactgta ctccagcctg ggcaacagcg 300
agactccatc tcaaaaaaaa aggaaatgtg tatcaagaac atgattatcc aggggtattt 360
tctaattcag atcatcaaac tgattatata gaagagttgg ctttaaaatg tttgca 416

<210> 972
<211> 242
<212> DNA
<213> Homo sapien

<400> 972
ccaaaaatcc caaaacatca ttttcaatca gtagagaagt gcttagggtt gaaaattgat 60
ttcatttgct actgaatttg gtaaatcctg ggtaactttt atcaagatga agacatttta 120
ccctacctac tctagaaata tacaacaatg ttatatttta cactccttgg aaacatttga 180
ggaaaaaaat gcaatttgca cttcactttg ttggaatatc ccatagcact caataaactc 240
ag 242

<210> 973
<211> 347
<212> DNA
<213> Homo sapien

<400> 973
cctgcagggg atggaacctt ccagaagtgg gcggctgtgg tggtgccttc tggagaggag 60
cagagataca cctgccatgt gcagcatgag ggtctgccca agcccctcac cctgagatgg 120

gagctgtctt cccagcccac catccccatc gtgggcatca ttgctggcct ggttctcctt 180
ggagctgtga tcactggagc tgtggtcgct gccgtgatgt ggaggaggaa gagctcagga 240
cattttcttc ccacagatag aaaaggaggg agttacactc aggctgcaag cagtgacagt 300
gcccagggct ctgatgtgtc tctcacagct tgtaaagtgt gagacag 347

<210> 974
<211> 571
<212> DNA
<213> Homo sapien

<400> 974
gaaagagcga gatgcgagaa cacttttggc taaaaatctc ccttacaaag tcactcagga 60
tgaattgaaa gaagtgtttg aagatgctgc ggagatcaga ttagtcagca aggatgggaa 120
aagtaaaggg attgcttata ttgaatttaa gacagaagct gatgcagaga aaacctttga 180
agaaaagcag ggaacagaga tcgatgggcg atctatttcc ctgtactata ctggagagaa 240
aggtcaaaat caagactata gaggtggaaa gaatagcact tggagtggtg aatcaaaaac 300
tctggtttta agcaacctct cctacagtgc aacagaagaa actcttcagg aagtatttga 360
gaaagcaact tttatcaaag taccccagaa ccaaaatggc aaatctaaag ggtatgcatt 420
tatagagttt gcttcattcg aagacgctaa agaagcttta aattcctgta ataaaaggga 480
aattgagggc agagcaatca ggctggagtt gcaaggaccc aggggatcac ctaatgccag 540
aagccagcca tccaaaactc tgtttgtcaa a 571

<210> 975
<211> 221
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(221)
<223> n = A,T,C or G

<400> 975
ctggaggtgc ctcanaaggt gcattctgct tcctgcaggg gcttgaaaca ccaaggcact 60
ccagggatcc tggagtcaaa gcagcagccc cggttgttgc actccttggg ggtgacatgg 120
gggtagccgc agtccaccct gtccttggct ggcacggcac actggtttgc agacaggccc 180
acgtactcct cagcagagct ggaggacagc aaggccagga c 221

<210> 976
<211> 316
<212> DNA
<213> Homo sapien

<400> 976
ccatcagatt gtcacagact tttataaccc tttgatccct accaacgtta agtatgagtt 60
tggccctgcc atcttcattg gctgggcagg gtctgcccta gtcatcctgg gaggtgcact 120
gctctcctgt tcctgtcctg ggaatgagag caaggctggg taccgtgcac cccgctctta 180
ccctaagtcc aactcttcca aggagtatgt gtgacctggg atctccttgc cccagcctga 240
caggctatgg gagtgtctag atgcctgaaa gggcctgggg ctgagctcag cctgtgggca 300
gggtgccgga caaagg 316

<210> 977
<211> 335
<212> DNA

<213> Homo sapien

<400> 977
cctgtttgtc tgtacagcaa tgcagatgcg caggcccatc ctggtggagg acccagatgc 60
agggagcaaa tattcgggtt gtgttgctaa gagtcgcagg aactactgct agtgatacta 120
ggcttgctgc aggaggatgt cacgctgaga aagggagatg actaggagca gaaaaagtac 180
tctcactgtt ccagcttcca gcccaatcct agcagaatga atgcatttta aaatcagtcc 240
acattcacat gtgctgagaa ggttgttagt ggtccctcat ctgggcaaag cagacccaag 300
atggtgctaa gtgcagagtg cagagcattc ttgtg 335

<210> 978
<211> 280
<212> DNA
<213> Homo sapien

<400> 978
cctaacaccc aagctcttcc ttgcagaaga gctgagatgc taaggagacc atctggagtg 60
tcataataag cccttgggat ttgctgagct cccacatggc tttcttcaac cacctggccc 120
actttcttca accacattcc actttggaat gcgtgtcttt aaggcaccaa gtgatcttaa 180
gaatgggctc tgtttttgaa ttcagcaatc caagttccta tctatctcgg tgggacctcc 240
aaaaaaaaga aaaaggattg gcttggcttc taatgtaagg 280

<210> 979
<211> 318
<212> DNA
<213> Homo sapien

<400> 979
ctgtccagat gacagtaaga ttccactgtc tgtaatcctc atggtgccag gtctcctggg 60
gcatctaggg caatgatgct actgcagttt atgcagttac acagtcaagt ctgtgccaaa 120
ggaggtccca tccggcggcc aggtttctgt tcagtctggg gagcaatgcc aactggctgc 180
ccccatagcc tggcatgagc tgatggccca gtgcaatccc aaagcaaaga agggcagaac 240
tgggccaaga agctgtggta atttgctctc cctgcctccg acagcgtcgt cctctccttt 300
tgcagcccca cacgcagg 318

<210> 980
<211> 568
<212> DNA
<213> Homo sapien

<400> 980
ccagcactgg ctccttgatg gttttcctag gacattagga caagccgaag ccctggacaa 60
aatctgtgaa gtggatctag tgatcagttt gaatattcca tttgaaacac ttaaagatcg 120
tctcagccgc cgttggattc accctcctag cggaagggta tataacctgg acttcaatcc 180
acctcatgta catggtattg atgacgtcac tggtgaaccg ttagtccagc aggaggatga 240
taaacccgaa gcagttgctg ccaggctaag acagtacaaa gacgtggcaa agccagtcat 300
tgaattatac aagagccgag gagtgctcca ccaattttcc ggaacggaga cgaacaaaat 360
ctggccctac gtttacacac ttttctcaaa caagatcaca cctattcagt ccaaagaagc 420
atattgaccc tgcccaatgg gagaaccagg aagatgtggt cattcattca atagtgtgtg 480
tagtattggt gctgtgtcca aattagaagc taactgaggt agcttgcagc atctcttcta 540
gttgaaatgg tgaactgata ggaaaaca 568

<210> 981
<211> 550

<212> DNA
<213> Homo sapien

<400> 981
ccatccccct ttagaacgta tcttaatgtg aacataaatt gttcttcatg atgcttaaaa 60
gcttacatat aattttcatt cttagaaaaa cgccacattt tggatcctgg atttttctga 120
atatcatgat tgaaaaaaac aaaacaaaaa atgaacccaa atcaaagtgt ggttaaactt 180
atatgagaaa gatttttcaa ccagatggtc attcaaaaaa gttggagctg taagtgccgg 240
cgactgagga cacagggtta attcctcgct gctggtggaa ggctagagaa catcttcaaa 300
agagggtagc aagacgtgct cctaggggag gctcagtgtg gtctcgtctg cccaagcatt 360
ttcagtcttg cttggtcaat gacatcgagt aagtttttgg catccacagc cagggcgtga 420
gcagcagtca gcatttgctt tttgtactct tgctggaggc tggtcatgac atactgctgg 480
gccagtttca tcttgttgat gagctcaccc aggtcagagt tcaatagctt ctgtgccatc 540
tcaatctctc 550

<210> 982
<211> 524
<212> DNA
<213> Homo sapien

<400> 982
ccaaggtcag aggctgatgc aacaggccct cttctcccca gggccaggct cctgtccagc 60
ctgggcactg cccagagtga tggcattggt ccggatgctg ttctgtctct gcttggacac 120
cttcgcaaag atttctttca ggacagtctc aaaggctagc tcaacattgg tagagtccag 180
ggctgaggtc tccaggaaga gcagtccatt gttttcagcg aacattcggg cctcctcagt 240
gggcacttcc cgggcctggc tgaggtcact tttgttaccc acgagcatga cgacgatcgt 300
ggcttcagca tggtcataga gctccttcag ccatcgctcc accacagcat aggtctggtg 360
cttggttagg tcaaacacca ggagggcccc cactgcacca cgatagtacc cttgaagaca 420
aagttataat cttcctcagt tccattcccc atcttggctc cgcatggagg gtgcaggtgt 480
cttcggggac agaggcgaca aatctgtgtg ttggctcaat gccc 524

<210> 983
<211> 140
<212> DNA
<213> Homo sapien

<400> 983
ccttcgtgcc ctaacagcca gtcccctgtt aaagtggaag agacctgtgg ctgccgctgg 60
acctgcccct gtgtgtgcac aggcagctcc actcggcaca tcgtgacctt tgatgggcag 120
aatttcaagc tgactggcag 140

<210> 984
<211> 358
<212> DNA
<213> Homo sapien

<400> 984
tggagcggcc gcccggcagg tccaacgagt cacaacagtg caataggtag aggattaaaa 60
actgcatcaa acaggtgctg aaaataaata ctacctagga gaaggaggtg agagccctcg 120
tgtggggttt gttttcgacc ccttgagtgt gtgtggggtt tgtcttccga gccacgagcc 180
tggcctgtct cgcggtgctg ttcactctga cagagtgcgc ctgcagcacg ttgcctccag 240
ggcccagcct cccagaagcc tcagagcatc agagcatccg tcccatcgga tggaccagaa 300
acaagaaaat ggggtggggt gaatcacagc tatcattcaa aggaaaggaa ttttttttc 358

<210> 985
<211> 450
<212> DNA
<213> Homo sapien

<400> 985
ctgacccccc tttgtccaca gctaagatgg cagcagaatg ctatgtcact atatacagaa 60
acaagacaac ctgaagctaa atggatgccc cctgcagagt caacaggtcc agcctcacag 120
tgcacgccct gagctacagc ctctcccaaa aggcatcttc cccacagcct caacgccgag 180
caaggagcat caagggtttg tctcggttgt tttgttcttt ttacaaacta tagatatata 240
cagttgaaaa ctcaggattt ctagccaata accatagtta ccaccacctt acaaataaaa 300
agaaaatgcc agaaacatct ttaaatgcct tgtcacacca acagcaaagt gcacagagtg 360
aggagaacac gagagtgcct tttcatttta aaatgtttgg gaaatatgta caactttgat 420
acagtttcag ggtgctccag acacccatgg 450

<210> 986
<211> 340
<212> DNA
<213> Homo sapien

<400> 986
cctcctgcca gcagttcttg aagcttcttt ttcattcctg ctactctacc tgtatttctc 60
agttgcagca ctgagtggtc aaaatacatt tctgggccac ctcagggaac ccatgcatct 120
gcctggcatt taggcagcag agcccctgac cgtcccccac agggctctgc ctcacgtcct 180
catctcattt ggctgtgtaa agaaatggga aaagggaaaa ggagagagca attgaggcag 240
ttgaccatat ccagttttat ttatttattt ttaatttgtt tttttctcca agtccaccag 300
tctctgaaat tagaacagta ggcggtatga gataatcagg 340

<210> 987
<211> 227
<212> DNA
<213> Homo sapien

<400> 987
ccaatgcccg gagcaggccc tctttccatc ccgtgtcgga tgagctggtc aactatgtca 60
acaaacggaa taccacgtgg caggccgggc acaacttcta caacgtggac atgagctact 120
tgaagaggct atgtggtacc ttcctgggtg ggcccaagcc accccagaga gttatgttta 180
ccgaggacct gaagctgcct gcaagcttcg atgcacggga acaatgg 227

<210> 988
<211> 241
<212> DNA
<213> Homo sapien

<400> 988
cctcttttta ccagctccga ggtgattttc atattgaatt gcaaattcga agaagcagct 60
tcaaacctgc cggggcttct cccgcctttt ttcccggcgg cgggagaagt agattgaagc 120
cagttgatta gggtgcttag ctgttaacta agtgtttgtg ggtttaagtc ccattggtct 180
agtaagggct tagcttaatt aaagtggctg atttgcgttc agttgatgca gagtgggttt 240
t 241

<210> 989
<211> 193
<212> DNA

<213> Homo sapien

<400> 989
ccagccgtgt cccagacttg tagtttgatc ttcttcccct ctatatccac agtgcggatc 60
ttgaaatcaa ttccgatggt ggagatgtaa gtgttgttga agttgtcctc tgcaaagcga 120
atgatcagac aagtcttgcc cacccccgag tccccgatca gcagcaactt gaagaggtgg 180
tcgtaggctt tgg 193

<210> 990
<211> 499
<212> DNA
<213> Homo sapien

<400> 990
cctcaaccaa gagggttgat ggcctccagt caagaaactg tggctcatgc cagcagagct 60
ctctcctcct ccagcaggcg ccatgcaagg gcaggctaaa agacctccag tgcatcaaca 120
tccatctagc agagagaaaa ggggcactga agcagctatg tctgccaggg gctaggggct 180
cccttgcaga cagcaatgct acaataaagg acacagaaat gggggaggtg ggggagccct 240
atttttataa caaagtcaaa cagatctgtg cgttcattcc cccagacaca caagtagaaa 300
aaaaccaatg ctgtggtttc tgccaagatg gaatattcct cctcctagtt ccacacatgg 360
cgtttgcaat gctcgacagc attgcactgg gctgctgtct ctgtgttctg gcaccagtag 420
cttgggcccc atatacactt ctcagttccc aacaagggct tatgggccga ggggcaggct 480
ccaattttca agcacacga 499

<210> 991
<211> 262
<212> DNA
<213> Homo sapien

<400> 991
ctgccagcca ggctgtggtc agtcctctgg caggcaatct tcggcaccga gagcctctgt 60
ccattagtgt cagccccgag gggccacgga cggaggccgc ccaatgtcca ctgtgatatt 120
ggtgaagagt ggttgccgag acacctccaa gacctggtac cgcactgacc caatgccgtc 180
ccgcttcatg gtcagcttcg tgttttgaat cttggtaaac ctctgagggt taggttcgtt 240
atgcttgtcg cggtcgtgct tg 262

<210> 992
<211> 535
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(535)
<223> n = A,T,C or G

<400> 992
ctgctgcttg tgaaattcat gtgtggtact aagtacctta catgaattat ttcatttaac 60
cctcccaaca gtctcctttg tacgtgctgn nctctctgcc tggaaacact gtttcccacc 120
cccaaccccc aattcttctg tttatttttc ttgagacaga gtctcactgt gtagcccaga 180
ctggagtgca gtggcgcgat ctcggctcac tccaatctcc gcctcccggg tccctgttca 240
agcagttctc ctgcctcagc ctcctgagta gctgggatta caggcacacg ccaccatgtc 300
cagctaattt ctgtattttt agtagagatg ggtttcacg atgttggcta ggatggtctc 360
gatctctggt cagagtcttt tctgtaaata tccttggtaa agaagcaatt ttagactgta 420

gctgttgcaa atgctttaag gaagaagcaa aacaactgtc agtcttnctg aaatgaagaa 480
actacaccag ggctgctata tcagagcaac cccaaccagc actncaatca tgatg 535

<210> 993
<211> 232
<212> DNA
<213> Homo sapien

<400> 993
ctgctgctct cccctcccag tctctactca ctgggatgag gttaggtcat gaggacacca 60
aaaacctaaa aataaacaaa aagccaaaca agccttagct tttcttaaag gctgaaatgc 120
ctggaagtgt ccctttattt ataaaataac ttttgtcata tttcttatac atgtttcttg 180
taagaaattc agaaactaca gacaaagaga gtggaaatta cccactgtca gg 232

<210> 994
<211> 203
<212> DNA
<213> Homo sapien

<400> 994
ccagcagatc atccacgacg accaccctct gtcctggctc cagggcgtct ttctgaatct 60
ccagctcagc cttcccgtac tccagggaat aggaggccca cagagtgggg cctggcagct 120
tcccccgctt tcggatgagc acgcagccca gtccaagctc ctgggccagg gaggggccaa 180
agaggaagcc tcgggagtct agg 203

<210> 995
<211> 238
<212> DNA
<213> Homo sapien

<400> 995
ccatgcctgc cccgcccact ctgtatatat gtaagttaaa cccgggcagg ggctgtggcc 60
gtctttgtac tctggtgatt tttaaaaatt gaatctttgt acttgcattg attgtataat 120
aattttgaga ccaggtctcg ctgtgttgct caggctggtc ccaaactcct gagatcaagc 180
aatccgccca cctcagcctc ccaaagtgct gagatcacag gcgtgagcca ccaccagg 238

<210> 996
<211> 379
<212> DNA
<213> Homo sapien

<400> 996
ctgcagcctg ggactgaccg ggaggctctg accatttacc caccacaggt aggttgtgtt 60
ctgaacctca ggttcacagg tgaaggccac agcatccttg tcctccacgg ggttggagtt 120
gttgctggag atggagggct tgggcagctc cgggtataca tggaactgtc cggttgcttc 180
ttcattcaca agatctgact ttatgacttg tagggtatag aatcctgtgt cattctgggt 240
gacgttctgg atcagcaggg atgcattggg gtatattgtc tctcgaccac tgtatgcggg 300
ccctggggta gcttgttgag ttcctattac atatcctaca attagactgt tgccatccac 360
tctttcgcct ttgtaccag 379

<210> 997
<211> 210
<212> DNA
<213> Homo sapien

<400> 997
ccatccgaag caagattgca gatggcagtg tgaagagaga agacatattc tacacttcaa 60
agctttggtg caattcccat cgaccagagt tggtccgacc agccttggaa aggtcactga 120
aaaatcttca attggattat gttgacctct accttattca ttttccagtg tctgtaaagg 180
ccgtggagaa gtgtaaagat gcaggattgg 210

<210> 998
<211> 207
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(207)
<223> n = A,T,C or G

<400> 998
ggtggctgtg ctgggggcgc cccacaaccc tgctcccccg acgtccaccg tgatccacat 60
ncgcagcgag acctccgtgc ccgaccatgt cgtctggtcc ctgttcaaca ccctcttcat 120
gaacccctgc tgcctgggct tcatagcatt cgcctactcc gtgaagtcta gggacaggaa 180
gatggttggc gacgtgaccg ggccca 207

<210> 999
<211> 315
<212> DNA
<213> Homo sapien

<400> 999
ccaatgggct ttgctgtagc ttgctgaaat caccaagcag gagagattta accagaggcg 60
atgtgtccag tcaccagcat agagccatcc tctgtgtcac catccacacg cagggccttc 120
tggcagacct catgcaatgc cctccatgtt aatattcatc agaaaatgga taattagggg 180
ggccagcaaa aatatcaagg gtcaaatatc gcacatttct gtttaggcca tctatggctt 240
tcatctcctc tgaagtcaac tggaattcaa acacctgcac gttctgtctg atgcgctgct 300
cattgtagct cttgg 315

<210> 1000
<211> 186
<212> DNA
<213> Homo sapien

<400> 1000
ctgttactca agaagatgta tttaatgctt gacaataaga gaaaggaagt agttcacaaa 60
ataatagagt tgctgaatgt cactgaactt acccagaatg ccctgattaa tgatgaacta 120
gtggagtgga agcggagaca gcagagcgcc tgtattgggg ggccgcccaa tgcttgcttg 180
gatcag 186

<210> 1001
<211> 173
<212> DNA
<213> Homo sapien

<400> 1001
ccacaaagcg gaaactcatc cacttttgcc tttttccgcc ccaggtcaaa aatgcgaatc 60

ttggcatcag ggacacctcg gcagaagcga gactttgggt acggcttgtt cttacaatac 120
cggtaacaac gggcggggcg gcggcccatg gcgacaccag gatcttcagt ggc 173

<210> 1002
<211> 302
<212> DNA
<213> Homo sapien

<400> 1002
ctgaatgcct gagcccagca gggagctgag gatcatgggg tactgggggg gcctgaagac 60
gtcgccgtgc accaacttcc acccagactc ctccatggtg tcttcaatgt catcctcctt 120
gttgtagttg gcaatgtcct tccggagggt ccgaatgata atcatgctca ggatacctga 180
caggaagaag accacaacaa cggagttaat gatagaaaac cagtggatct ggacgtcact 240
catggtcagg taagtgtccc agcgagaggc ccatttgata tcactttcct cccagtggac 300
ag 302

<210> 1003
<211> 368
<212> DNA
<213> Homo sapien

<400> 1003
cctgggcccg ctgacttcag ggtgaggcca cagctactgc agcgcttttt atttatttat 60
ttatttactg agatggagtc ttgctctgtc acccaggctg gagtgcagtg gtgcaatctc 120
ggctcactgc aacctctgcc tcctgggctg cagtgattct cctgcgttca agtaattctc 180
ctgcctcggc cttctgagta gttgggatta caggcatatg ccaccacact tggctaattt 240
tttgtatttt tagtagaaat ggggtttcac catgttggcg aggctggtct cgaactcccg 300
acctcaagga tcctcctgcc tcggcctcct aaggtgctgg gattgcaggt gtgagccacc 360
acgtctgg 368

<210> 1004
<211> 294
<212> DNA
<213> Homo sapien

<400> 1004
ctgggcggat agcaccgggc atattttgga atggatgagg tctggcaccc tgagcagtcc 60
agcgaggact tggtcttagt tgagcaattt ggctaggagg atagtatgca gcacggttct 120
gagtctgtgg gatagctgcc atgaagtaac ctgaaggagg tgctggctgg taggggttga 180
ttacagggtt gggcacagct cgtacacttg ccattctctg catatactgg ttagtgaggt 240
gagcctggcg ctcttctttg cgctgagcta aagctacata caatggcttt gtgg 294

<210> 1005
<211> 414
<212> DNA
<213> Homo sapien

<400> 1005
ctgaagcact cttcagagac tacgtccaca gacactgatg ctgaggcctt tcttgtaagt 60
gaagaaaaag gaatgcagca aagaagagtt cgacattgga gtccttagtt ccatcaggat 120
cccattcgca gcctttagca tcatgtagaa gcaaactgca cctatggctg agataggtgc 180
aatgacctac aagattttgt gttttctagc tgtccaggaa aagccatctt cagtcttgct 240
gacagtcaaa gagcaagtga aaccatttcc agcctaaact acataaaagc agccgaacca 300
atgattaaag acctctaagg ctccataatc atcattaaat atgcccaaac tcattgtgac 360

tttttatttt atatacagga ttaaaatcaa cattaaatca tcttatttac atgg 414

<210> 1006
<211> 272
<212> DNA
<213> Homo sapien

<400> 1006
ccggagccca cggtggtcat ggctgccaga gcgctctgca tgctggggct ggtcctggcc 60
ttgctgtcct ccagctctgc tgaggagtac gtgggcctgt ctgcaaacca gtgtgccgtg 120
ccagccaagg acagggtgga ctgcggctac ccccatgtca cccccaagga gtgcaacaac 180
cggggctgct gctttgactc caggatccct ggagtgcctt ggtgtttcaa gcccctgcag 240
gaagcagaat gcaccttctg aggcacctcc ag 272

<210> 1007
<211> 313
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(313)
<223> n = A,T,C or G

<400> 1007
cctgccttac tctnttccct ttccccaggg actcttggtt ttcagaagcc cctctggaat 60
gtcctacctg gcctaacccc ataccagcag tgcagacaag gaggcactcc tactatagtg 120
ggtccagccc atggagagac tcacttcctg ccccaacacc tcttccccta gaccctgagg 180
gccaggacaa tgtcttagtg ccttccaact tggcagagtg aggccccatg agacagagag 240
aaagggggaa gagggaaata cctttatcca aataaatacc catccaaaat tatttgtgat 300
aggtgaaaaa tgg 313

<210> 1008
<211> 317
<212> DNA
<213> Homo sapien

<400> 1008
cctcaatgtc gtgctagagg ggccgaagaa ggccgtgaac gacgtgaatg gcctgaagca 60
atgtttggca gaattcaagc gggatctgga atgggttgaa aggctcgatg tgacactggg 120
tccggtaccg gagatcggtg gatctgaggc gccagcacct cagaacaagg accagaaagc 180
tgttgatcca gaagacgact tccagcgaga gatgagtttc tatcgccaag cccaggccgc 240
agtgcttgca gtcttacccc gcctccatca gctcaaagtc cctaccaagc gacccactga 300
ttattttgcg gaaatgg 317

<210> 1009
<211> 456
<212> DNA
<213> Homo sapien

<400> 1009
tttttttgta gggtatagaa aatacatttt taattttgat agagttcaca aatgacagca 60
ttgacatttc tttaaacaaa tacttctgtc aaggcacagc attaccatgt gtccccagat 120
gcccaagagg cagtgatttc atgtcccccct gaggtttagc agagccacca atgtcaatag 180

ggtggctgac ggggcctaga tttgctacca gataagccaa tgagacatgc tgtcagattt 240
atggttacat aatcaagtat ttaaaaagat gcacaatagg taactgcaat gagcttgttc 300
tgcatttagc gatagttcct ttcaaacaaa gaagatagtt ttcagtatca agaaggatgc 360
ctatatgtat gtcttccatg gagcctttcc tacaaattgc tttcattaca cattaaaagg 420
agttcagctt tattgtgacc ttcttgagtc attcag 456

<210> 1010
<211> 196
<212> DNA
<213> Homo sapien

<400> 1010
ctgggcatgg gctgaggaga ggtcttgctt gcccccttca actttccatc tcagaactat 60
aaactgctag gctgcaagga gagaagggct aagtgggggt cagacaggag agaagggcag 120
gaggcagtga gccccgatga cccaccaact ccaccaggcc ctgacaggga agcccctttg 180
gttagtatca ttttgg 196

<210> 1011
<211> 449
<212> DNA
<213> Homo sapien

<400> 1011
ccttgcggct gctgcgaaag gccacggcgc tgcctgcccg ccgggccgag tactttgatg 60
gttcagagcc cgtgcagaac cgcgtgtaca agtcactgaa ggtctggtcc atgctcgccg 120
acctgaagga gagcctcggc accttccagt ccaccaaggc cgtgtacgac cgcatcctgg 180
acctgcgtat cgcaacaccc cagatcgtca tcaactatgc catgttcctg gaggagcaca 240
agtacttcga ggagagcttc aaggcgtacg agcgcggcat ctcgctgttc aagtggccca 300
acgtgtccga catctggagc acctacctga ccaaattcat tgcccgctat gggggccgca 360
agctggagcg ggcacgggac ctgtttgaac aggctctgga cggctgcccc ccaaaatatg 420
ccaagacctt gtacctgctg tatgcacag 449

<210> 1012
<211> 289
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(289)
<223> n = A,T,C or G

<400> 1012
ccaggaccac aaccccacgc tgtagctggt agcgcagggc aatcagggct ggggttcgct 60
tgtgcttttt tgccaaggca caaaggactg ggtcctccaa gagcaccggg gagttcgggt 120
ccacccatgg ttcttctcgg tgggatccca gagcactata ggcaaccaga acaatgtctt 180
ttgacttgca gaaatccagc agttttctct ggttgaagta aggatgacat tccacctggt 240
tgcagacagg cttgtacttg agccctggct tgtnnaggat catctccag 289

<210> 1013
<211> 221
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(221)
<223> n = A,T,C or G

<400> 1013
tctgtaaatg ctgcgttcct aatttagtaa aataaaagaa tagacactaa aatcatgttg 60
atctataatt acacctatgg gatcaataag catgtcanna ctgattaatg tctactgtaa 120
aaatttggta gnnaaatttt catttgatat tagatataaa tatctgaata taaataattn 180
taatatacta gtcatgatgt gtgttgtatt ttaaaaatta t 221

<210> 1014
<211> 512
<212> DNA
<213> Homo sapien

<400> 1014
gggcccccga agcctctaca atgggctggt tgccggcctg cagcgccaaa tgagctttgc 60
ctctgtccgc atcggcctgt atgattctgt caaacagttc tacaccaagg gctctgagca 120
tgccagcatt gggagccgcc tcctagcagg cagcaccaca ggtgccctgg ctgtggctgt 180
ggcccagccc acggatgtgg taaaggtccg attccaagct caggcccggg ctggaggtgg 240
tcggagatac caaagcaccg tcaatgccta caagaccatt gcccgagagg aagggttccg 300
gggcctctgg aaagggacct ctcccaatgt tgctcgtaat gccattgtca actgtgctga 360
gccggcgacc tatgacctca tcaaggatgc cctcctgaaa gccaacctca tgacagatga 420
cctcccttgc cacttcactt ctgcctttgg ggcaggcttc tgcaccactg tcatcgcctc 480
ccctgtagac gtggtcaaga cgagatacat ga 512

<210> 1015
<211> 553
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(553)
<223> n = A,T,C or G

<400> 1015
ctgggcagga agattatgat cgcccgaggc cctctcccta cccagatacc gatgttatac 60
tgatgtgttt ttccatcgac agccctgata gttcagaaaa catcccagaa aagtggaccc 120
cagaagtcaa gcatttctgt cccgacgtgc ccatcatcct ggttgggaat aagaaggatc 180
ttcggaatga tgagcacaca aggcgggagc tagccaagat gaagcaggag ccggtgaaac 240
ctgaagaagg cagagatatg gcaaacagga ttggcgcctt tgggtacatg gagtgctcag 300
caaagaccag agatggagtg agagaggttt ttgaaatggc tacgagagct gctctgcaag 360
ctagacgtgg gaagaaaaaa tctgggtgcc ttgtcttgtg aaaccttgct gcaagcacag 420
cccttatgcg gttaattttg aagtgctgtt tattaatctt agtgtatgat tactggcctt 480
tttcatttat ctataattta cctaagatta caaatcanga agtcatcttg ctaccagtat 540
ttagaagcca act 553

<210> 1016
<211> 431
<212> DNA
<213> Homo sapien

<400> 1016
ccacttcaca tgatggcggg cctttaagag cacaaagaag tttaatatgg acaacaacag 60
gaaaaagcaa gaagaaaaca agtagggaaa gacagctaac ctggagagag agaatttctt 120
taacctttat gttcttcatt aaaaatctta tcttggactg atttgaggga tttttagaaa 180
catggcctta ttttatataa gcattacctt cccaggaatc tttgttgtat attaattttt 240
gataaccatt tgattaactt taaaattaag tatatgtgtg tatatataca tatgtatgtt 300
tatatacaca catgtatctg tatagtttta tatatacata tatacacata gacatacaga 360
gaaccactac tttgtaatag tgtacagttt gttttatatc tctttacttt ttttgttact 420
attttatctg t 431

<210> 1017
<211> 490
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(490)
<223> n = A,T,C or G

<400> 1017
ctggaagaac aaggcgaagt tctggtggct gtctgcgatg aatgtgccct tggctttggc 60
tgggtatgtc acccgggtag ttttgggtgc aatgctctga tccttatcca cggtggaaag 120
atcaacattt gtgatgccaa cttcagtgga gatcttgact ctgagctcta cggtatttgc 180
aatataccgg ttgtcacctt caacttcgac aaggaagtca taataaccac tggaaaattt 240
gacgttcatg aaatttagtt caaaaacatc ccctacaggg gtgaaggatg tcttctggag 300
gacagtggct ctggaagcaa cagatttagc atgttctagt ttaacagtgg cctgagtcag 360
aggctgagac agaacattgg tgacttgcaa ccgcaagata gcctgttcat gagtgtcgga 420
agcaganccc tcangcacaa ccacaactgg cacgtggtag cgattatgcg agagcacagg 480
cagacctcgg 490

<210> 1018
<211> 503
<212> DNA
<213> Homo sapien

<400> 1018
ggagtaagct gagtacaagt accatagcag cagagctgca aaaggtcttg ggacctatag 60
tcctaatgca agataaggtc atggggccta aggccatggg gcctgaggca cccctagacc 120
ctgagccttc agcatttaag ggagggtgtc cccccattct cgataggcca tggtacacag 180
atgggtctag ccgaggtgct ataactgctt ggaccactgt tgcagtccaa cctagtactg 240
acactatatg gtttgaaacc cggtgtggac aaagtagcca atgggctgaa cttagagcag 300
tgtggatggt gatcaccaag gaggtgacac tgatggtaat ctgtatcaat agctgggtgg 360
tctaccaagg cttaactttg tggttaacta cctggaaaat acagaagttg ctagtcggcc 420
accaacccat ttggggtcaa gccacgtggc aagacctctg ggaaatgggt catcagaaac 480
aggtaaccgt ttatcatgtg tca 503

<210> 1019
<211> 348
<212> DNA
<213> Homo sapien

<400> 1019
cctgtgtatg gagtagaggc gggtgcacgg gtactgttcc tcacggcagt caagaggccc 60

aggctctgtg ggctccagct ctgcatttcc cggttctggg gttggggctg ggatgacttc 120
ctgttggact tgctgctggg actggaactg gaactgttcc tcggagggcc gaggagtcac 180
ctcttgataa tcatagtagt ctgggttgtc gatctggtcg ctatagtggg tgtactggac 240
gtggtcaggg aacggcggca gcgggtccag gtcatactgg ccctgagcca gcaagcctgc 300
aggcaggaat agcaggaaga ggtaggcagc tctcatggca acaaagag 348

<210> 1020
<211> 260
<212> DNA
<213> Homo sapien

<400> 1020
ccacacggcg accgagggac agatggggcc ctgcgtccca taggctgcct gaaggtgggt 60
agggcggcct gcggcatagt ggggtggctg tgggctccca gcctggcccc tgggaaccgt 120
gggagcacag ggacaagcac atggctatgg aatgcagggt gacccaagga caagcgagtt 180
gcggggatct ctactgtgac catgcagaat tgatcgcagt ctgctgcgcc accaccacct 240
catgttcccg aggggaacag 260

<210> 1021
<211> 407
<212> DNA
<213> Homo sapien

<400> 1021
ccttatgact ataacggccc acgagaaaaa tatggaatcg ttgattacat gatcgagcag 60
tccgggcctc cctccaagga gattctgacc ctgaagcagg tccaggagtt cctgaaggat 120
ggagacgatg tcatcatcat cggggtcttt aaggggggaga gtgacccagc ctaccagcaa 180
taccaggatg ccgctaacaa cctgagagaa gattacaaat ttcaccacac tttcagcaca 240
gaaatagcaa agttcttgaa agtctcccag gggcagttgg ttgtaatgca gcctgagaaa 300
ttccagtcca agtatgagcc ccggagccac atgatggacg tccagggctc cacccaggac 360
tcggccatca aggacttcgt gctgaagtac gccctgcccc tggttgg 407

<210> 1022
<211> 140
<212> DNA
<213> Homo sapien

<400> 1022
ccaccccaga gtgggagagg ctgggaggtt gggaggctgt ggagagaagt gagcaaggtg 60
ctcttgaacc tgtgctcatt ttgcaatttt atcagtaatt tgacttagag tttttacgaa 120
acctcttttg ttgtccttgc 140

<210> 1023
<211> 280
<212> DNA
<213> Homo sapien

<400> 1023
ctggaggtgc ctcagaaggt gcattctgct tcctgcaggg gcttgaaaca ccaaggcact 60
ccagggatcc tggagtcaaa gcagcagccc cggttgttgc actccttggg ggtgacatgg 120
gggtagccgc agtccaccct gtccttggct ggcacggcac actggtttgc agacaggccc 180
gcgtactcct cagcagagct ggaggacagc aaggccagga ccagccccag catgcagagc 240
gctctggcag ccatgaccac cgtgggctcc gggacgcagc 280

<210> 1024
<211> 274
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(274)
<223> n = A,T,C or G

<400> 1024
cctggctgag caggcagagc accctgggac cccagggcag aaggacccct gccctccagt 60
ccccaagacc caggcccgtc tccactcata cacgccacct acatgtgacg tcagccctga 120
aaaggtaaca ggaaagttca gaacaaaaac aaaaccccaa aagtaaaaag gctacgtgta 180
gcagagtaat accggaaacg ttatatacac aggcggtgat ggcccccctcg gaagtgtccg 240
ggtcacttag ggggcactgc anaggtccct gtgg 274

<210> 1025
<211> 446
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(446)
<223> n = A,T,C or G

<400> 1025
gcaaagagtg tactgtgctt gaggcagagc actcacacat aaatggctgt gtgtggaatt 60
gcttgccaaa gaagtttcta gcctttccct ttcccctaac tgcatcaggg aagaattctt 120
atctctagct tggtttccac atgaggtttt tctgagaagg gcttgggaca agaagtctgt 180
catgttagtt aagcaggcaa gaaatcctac taatccagtt ttgtttgaaa gttgtttgtc 240
cgtatgattt tttaaaagtc aagtttaatt tcaaaaaacc tttttttct gagattactt 300
ttggggtaat atttaaaatg agagacattt tgtaaccctg taaaatacat agggaatata 360
acattccagt gtatacaaag aaggcaaatt ctttaatcaa ataaagcgca ttataaaatc 420
aaaaaanaaa naaaaaaaan aaaaaa 446

<210> 1026
<211> 189
<212> DNA
<213> Homo sapien

<400> 1026
ctgtgagaga gatgctcaat atgccccagg ctatgacaaa gtcaaggaca tctcagaggt 60
ggtcacccct cggttccttt gtactggagg agtgagtccc tatgctgacc ccaatacttg 120
cagaggtgat tctggcggcc ccttgatagt tcacaagaga agtcgtttca ttcaagttgg 180
tgtaatcag 189

<210> 1027
<211> 92
<212> DNA
<213> Homo sapien

<400> 1027

ccagaccctc cttagtacag gatctcggac cacaaaccaa ggagtctcgt ggccttggat 60
tcccagaccc taggatggta tccctctgac ag 92

<210> 1028
<211> 438
<212> DNA
<213> Homo sapien

<400> 1028
ctgaaaagcc atctttgcat tgttcctcat ccgcctcctt gctcgccgca gccgcctccg 60
ccgcgcgcct cctccgccgc cgcggactcc ggcagcttta tcgccagagt ccctgaactc 120
tcgctttctt tttaatcccc tgcatcggat caccggcgtg ccccaccatg tcagacgcag 180
ccgtagacac cagctccgaa atcaccacca aggacttaaa ggagaagaag gaagttgtgg 240
aagaggcaga aaatggaaga gacgcccctg ctaacgggaa tgctaatgag gaaaatgggg 300
agcaggaggc tgacaatgag gtagacgaag aagaggaaga aggtggggag gaagaggagg 360
aggaagaaga aggtgatggt gaggaagagg atggagatga agatgaggaa gctgagtcag 420
ctacgggcaa gcgggcag 438

<210> 1029
<211> 330
<212> DNA
<213> Homo sapien

<400> 1029
ccagccgcat gggagtggag gcagtcatcg ccttgctaga ggccaccccg gacaccccag 60
cttgcgtcgt gtcactgaac gggaaccacg ccgtgcgcct gccgctgatg gagtgcgtgc 120
agatgactca ggatgtgcag aaggcgatgg acgagaggag atttcaagat gcggttcgac 180
tccgagggag gagctttgcg ggcaacctga acacctacaa gcgacttgcc atcaagctgc 240
cggatgatca gatcccaaag accaatcgca acgtagctgt catcaacgtg gggcaccccg 300
cggctgggat gaacgcggcc gtacgctcag 330

<210> 1030
<211> 228
<212> DNA
<213> Homo sapien

<400> 1030
ctggagactc tgggccagga gaagctgaag ctggaggcgg agcttggcaa catgcagggg 60
ctggtggagg acttcaagaa caagtatgag gatgagatca ataagcgtac agagatggag 120
aacgaatttg tcctcatcaa gaaggatgtg gatgaagctt acatgaacaa ggtagagctg 180
gagtctcgcc tggaagggct gaccgacgag atcaacttcc tcaggcag 228

<210> 1031
<211> 294
<212> DNA
<213> Homo sapien

<400> 1031
ccacaaagcc attgtatgta gctttagctc agcgcaaaga agagcgccag gctcacctca 60
ctaaccagta tatgcagaga atggcaagtg tacgagctgt gcccaaccct gtaatcaacc 120
cctaccagcc agcacctcct tcaggttact tcatggcagc tatcccacag actcagaacc 180
gtgctgcata ctatcctcct agccaaattg ctcaactaag accaagtccc cgctggactg 240
ctcagggtgc cagacctcat ccattccaaa atatgcccgg tgctatccgc ccag 294

<210> 1032
<211> 278
<212> DNA
<213> Homo sapien

<400> 1032
ggaggtatta cagacagcac tgcactttgg agttgggcag ctacatcgag gacctctttg 60
tggtccacag tgacctctcc agcattgtga tcctggataa ctccccaggg gcttacagga 120
gccatccaga caatgccatc cccatcaaat cctggttcag tgaccccagc gacacagccc 180
ttctcaacct gctcccaatg ctgggtgccc tcaggttcac cgctgatgtt cgttccgtgc 240
tgagccgaaa ccttcaccaa catcggctct ggtgacgg 278

<210> 1033
<211> 155
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(155)
<223> n = A,T,C or G

<400> 1033
cgcgttcanc catgttnaaa ccgattgcat naacttcgaa accggcccgc ccgccggcgc 60
ctggagaggg gcanngggag aagcagagag tttatcattc atctgtacac atagacgttt 120
cttctttaaa taacaccacg ggcgggagcc ccatc 155

<210> 1034
<211> 401
<212> DNA
<213> Homo sapien

<400> 1034
ctggaccagc accccattga cgggtacctc tcccacaccg agctggctcc actgcgtgct 60
cccctcatcc ccatggagca ttgcaccacc cgctttttcg agacctgtga cctggacaat 120
gacaagtaca tcgccctgga tgagtgggcc ggctgcttcg gcatcaagca gaaggatatc 180
gacaaggatc ttgtgatcta aatccactcc ttccacagta ccggattctc tctttaaccc 240
tccccttcgt gtttccccca atgtttaaaa tgtttggatg gtttgttgtt ctgcctggag 300
acaaggtgct aacatagatt taagtgaata cattaacggt gctaaaaatg aaaattctaa 360
cccaagacat gacattctta gctgtaactt aactattaag g 401

<210> 1035
<211> 333
<212> DNA
<213> Homo sapien

<400> 1035
ctgagctggg ggttgaattt ctccaggcac tccctggaga gaggacccag tgacttgtcc 60
aagtttacac acgacactaa tctcccctgg ggaggaagcg ggaagccagc caggttgaac 120
tgtagcgagg cccccaggcc gccaggaatg gaccatgcag atcactgtca gtggagggaa 180
gctgctgact gtgattaggt gctggggtct tagcgtccag cgcagcccgg gggcatcctg 240
gaggctctgc tccttagggc atggtagtca ccgcgaagcc gggcaccgtc ccacagcatc 300
tcctagaagc agccggcaca ggagggaagg tgg 333

<210> 1036
<211> 198
<212> DNA
<213> Homo sapien

<400> 1036
ccaatgtaca tggtggacta tgccggcctg aacgtgcagc tcccgggacc tcttaattac 60
tagacctcag tactgaatca ggacctcact cagaaagact aaaggaaatg taatttatgt 120
acaaaatgta tattcggata tgtatcgatg ccttttagtt tttccaatga tttttacact 180
atattcctgc caccaagg 198

<210> 1037
<211> 289
<212> DNA
<213> Homo sapien

<400> 1037
ctggagatga tcctcaacaa gccagggctc aagtacaagc ctgtctgcaa ccaggtggaa 60
tgtcatcctt acttcaacca gagaaaactg ctggatttct gcaagtcaaa agacattgtt 120
ctggttgcct atagtgctct gggatcccac cgagaagaac catgggtgga cccgaactcc 180
ccggtgctct tggaggaccc agtcctttgt gccttggcaa aaaagcacaa gcgaacccca 240
gccctgattg ccctgcgcta ccagctacag cgtggggttg tggtcctgg 289

<210> 1038
<211> 368
<212> DNA
<213> Homo sapien

<400> 1038
ccagacgtgg tggctcacac ctgcaatccc agcaccttag gaggccgagg caggaggatc 60
cttgaggtca ggagttcgag accagcctcg ccaacatggt gaaaccccat ttctactaaa 120
aatacaaaaa attagccaag tgtggtggca tatgcctgta atcccaacta ctcagaaggc 180
cgaggcagga gaattacttg aacgcaggag aatcactgca gcccaggagg cagaggttgc 240
agtgagccga gattgcacca ctgcactcca gcctgggtga cagagcaaga ctccatctca 300
gtaaataaat aaataaataa aaagcgctgc agtagctgtg gcctcaccct gaagtcagcg 360
ggcccagg 368

<210> 1039
<211> 417
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(417)
<223> n = A,T,C or G

<400> 1039
ctgggcctat gctggtcatg aacggtcctg gaaaatgact cccttccttc agtatctgca 60
tcctcatgaa gtcattcatt ttggagatcg tgtcttcact tttcttggtg aagaaactgc 120
tggatggagt tgttggtggc atctgaggag tccgaagatg gctctcaggg aaggttgtgc 180
tggcctctga aggatttgga agctgactct gttcctgggg tagctnnatg ctcttggggt 240
cattgnttct cgggtttgnt tttttcttta tctggataaa actatgcatt tctgaaatca 300
gttttgacat ctggttcttt tttcctaagt cgaaagcaga aaagttggaa gcttatctcc 360

ttcttcacag ggggatattg tggacattgn nctgtcccca ctacatccat ttttcct 417

<210> 1040
<211> 409
<212> DNA
<213> Homo sapien

<400> 1040
ctgtccaatg gcaacaggac cctcactcca ttcaatgtca caagaaatga cgcaagagcc 60
tatgtatgtg gaatccagaa ctcagtgagt gcaaaccgca gtgacccagt caccctggat 120
gtcctctatg ggccggacac cccatcatt tcccccccag actcgtctta cctttcggga 180
gcgaacctca acctctcctg ccactcggcc tctaacccat ccccgcagta ttcttggcgt 240
atcaatggga taccgcagca acacacacaa gttctcttta tcgccaaaat cacgccaaat 300
aataacggga cctatgcctg ttttgtctct aacttggcta ctggccgcaa taattccata 360
gtcaagagca tcacagtctc tgcatctgga acttctcctg gtctctcag 409

<210> 1041
<211> 492
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(492)
<223> n = A,T,C or G

<400> 1041
cctcggctcc acacctccgc tgtgaccaca gcctcaggtc aagctgtgct ggggccatcc 60
accttccttt gccatttaga agatggggct tggagcttgg caacacagaa attgacatca 120
gccttataaa accttggctg aacctaccga cctccaggag aatttcagcc aaaacaaaaa 180
agcaaataca cagagggacc ctggaaccag aatccctccc catgggaaag acgaaggcac 240
agagattcga gccaagtttc ccaacatgtt ggtgtttgca gaaaagtccg gtcacgtcac 300
acacagcaca gaggcaagaa gcgaaggcag tggcattcac aggactactt tatattaaag 360
tttattacat ttggaaaatc tactgtacag ggaaaaaccc attggattaa gtagagtttt 420
gccaaaagca aaagactatc actctttgga aaatattcct gattccagcc canggcccag 480
ggtggggcca ca 492

<210> 1042
<211> 125
<212> DNA
<213> Homo sapien

<400> 1042
cctggctctg atccagtgac ccctctcacc aaagaactcg gtttaaccag ggctctgtaa 60
gaccactccc acccagagac ttgtgtggcc tggtgtggcc tgtgtgtcgg attccttcct 120
gtcag 125

<210> 1043
<211> 459
<212> DNA
<213> Homo sapien

<400> 1043
ccagcctgga gataagggtg aaggtggtgc cccggactt ccaggtatag ctggacctcg 60

tggtagccct ggtgagagag gtgaaactgg ccctccagga cctgctggtt tccctggtgc 120
tcctggacag aatggtgaac ctggtggtaa gggagaaaga ggggctccgg gtgagaaagg 180
tgaaggaggc cctcctggag ttgcaggacc ccctggaggt tctggacctg ctggtcctcc 240
tggtccccaa ggtgtcaaag gtgaacgtgg cagtcctggt ggacctggtg ctgctggctt 300
ccctggtgct cgtggtcttc ctggtcctcc tggtagtaat ggtaacccag gacccccagg 360
tcccagcggt tctccaggca aggatgggcc cccaggtcct gcgggtaaca ctggtgctcc 420
tggcagccct ggagtgtctg gaccaaaagg tgatgctgg 459

<210> 1044
<211> 368
<212> DNA
<213> Homo sapien

<400> 1044
cctgggcccg ctgacttcag ggtgaggcca cagctactgc agcgcttttt atttatttat 60
ttatttactg agatggagtc ttgctctgtc acccaggctg gagtgcagtg gtgcaatctc 120
ggctcactgc aacctctgcc tcctgggctg cagtgattct cctgcgttca agtaattctc 180
ctgcctcggc cttctgagta gttgggatta caggcatatg ccaccacact tggctaattt 240
tttgtatttt tagtagaaat ggggtttcac catgttggcg aggctggtct cgaactcctg 300
acctcaagga tcctcctgcc tcggcctcct aaggtgctgg gattgcaggt gtgagccacc 360
acgtctgg 368

<210> 1045
<211> 315
<212> DNA
<213> Homo sapien

<400> 1045
ccaatgggct ttgctgtagc ttgctgaaat caccaagcag gagagattta accagaggcg 60
atgtgtccag tcaccagcat agagccatcc tctgtgtcac catccacacg cagggcctcc 120
tggcagacct catgcaatgc cctccatgtt aatattcatc agaaaatgga taattagggg 180
ggccagcaaa aatatcaagg gtcaaatatc gcacatttct gtttaggcca tctatggctt 240
tcatctcctc tgaagtcaac tggaattcaa acacctgcac gttctgtctg atgcgctgct 300
cattgtagct cttgg 315

<210> 1046
<211> 317
<212> DNA
<213> Homo sapien

<400> 1046
cctcgcctgg agggccccgg gcagcacagg gaggacgagc ttgtccagca gagggtctgg 60
cagagggtcc cgcagaggtt tgggcagggg gtctgacatc cctggctcct gctctggctc 120
tggctgccgg gatttgcaca ggcccaggtg catacagatg ccgtttgagt caatctggtt 180
ctggaagtag tcgatgacca gggggaagta gtcgtcaagc acttggttgc actggggcat 240
gagcagcttc aaggggagga cgttgcactc ctgctccagg aacttcctca ccgtgtcctg 300
gaaaatggcc tccttgg 317

<210> 1047
<211> 412
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(412)
<223> n = A,T,C or G

<400> 1047
gtacaagctt tttttttttt tttttttttt tttgtttaat gcttgaactt tattttggag 60
agagaaattt agaaagacac aaggtacaca gagtaaaatg tttttctttt ttcaggacct 120
tgaactgaat cttgcactgc tttggtttct atctaggaag ctcagcgaca gcagagtctg 180
tanaggcggc cactgatttc acacaccccg gagagggact cacgggtagc acaacggccg 240
gttcggcaat agcaggtggc tcttgcctga naacctgagg ttctaanagc ananagtcca 300
tttcctgcaa aggagatagc aaggtcctgg ttgtcttccc canactgctt ctgggttgta 360
gcctcatcag ctctttcctg gagtgactca gcctgggcct gcagggccac ca 412

<210> 1048
<211> 476
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(476)
<223> n = A,T,C or G

<400> 1048
taaaaaaagg aaaaagtttt attacgaaac tagtttgtat aaaacagggt tatacatatt 60
tttgtaagtt tgtaataaaa cagtaagaaa aaaaggcagt aatagaaatc tccaaaaggc 120
aacctatcaa aaccaactgg ctgccacttt gagtttggac agtagctgca taaactttgt 180
tcttcttgaa cagtatttaa taacatcatt aatacattaa caacatttct ataaagtaag 240
acacattggt gctgaagtac aactggnggc ctcttgatct cacctatgag gagagttctt 300
tacaaaacca catagggaaa attgcagttg taaggngaac tacncatcta aaatatgcan 360
aggtaatagc attacatgtt aaaggtatca agggnatata cacattttaa accatttgnn 420
acaaaacttn tataaaattt ntttctctct ctttctctct tatgcacaaa aaatat 476

<210> 1049
<211> 274
<212> DNA
<213> Homo sapien

<400> 1049
cctggctgag caggcagagc accctgggac cccagggcag aaggacccct gccctccagt 60
ccccaagacc caggcccgtc tccactcata cacgccacct acatgtgacg tcagccctga 120
aaaggtaaca ggaaagttca gaacaaaaac aaaaccccaa aagtaaaaag gctacgtgta 180
gcagagtaat accggaaacg ttatatacac aggcggtgat ggccccctcg gaagtgtccg 240
ggtcacttag gggcactgc agaggtccct gtgg 274

<210> 1050
<211> 472
<212> DNA
<213> Homo sapien

<400> 1050
ctgcagcctg ggactgaccg ggaggctctg attatttacc caccacaggt aggttgtgtt 60
ctgaatctca ggttcacagg ttaaggctac agcatcctca tcctccacgg ggttggagtt 120
gttgctggtg atgaagggtt tgggtggctc tgcatagact gtgatcgtcg tgactgtggt 180

cctattgagg ccagtgtctg agttatgggc ttggcacgta taggatccac tattattcac 240
agtgatgttg gggataaaga gctcttgggt ggattgctgg aaagtcccat tgacaaacca 300
agagtactgt gcaggtgggt tagaggctgc gtggcaggag aggttcagat tttcccctga 360
tctgtaagat gtgtttagag gggaaatggt gggggcatcc gggccataga ggacattcag 420
gatgactgaa tcactgcgcc tggcactcac tgggttctgg gtttcacatt tg 472

<210> 1051
<211> 249
<212> DNA
<213> Homo sapien

<400> 1051
ccaccaaccg tggcatcacg cgaatccggg gcaccagcta ccagagccct cacggcatcc 60
ccatagacct gctggaccgg ctgcttatcg tctccaccac cccctacagc gagaaagaca 120
cgaagcagat cctccgcatc cggtgcgagg aagaagatgt ggagatgagt gaggacgcct 180
acacggtgct gacccgcatc gggctggaga cgtcactgcg ctacgccatc cagctcatca 240
cagacctgc 249

<210> 1052
<211> 289
<212> DNA
<213> Homo sapien

<400> 1052
ccaggaccac aaccccacgc tgtagctggt agcgcagggc aatcagggct ggggttcgct 60
tgtgcttttt tgccaaggca caaaggactg ggtcctccaa gagcaccggg gagttcgggt 120
ccacccatcg tttgtctcgt tgagatccca gagcactata ggcaaccaga acaatatctt 180
tcgacttgca gaaatctagc aatttactcc ggttgaaata cggatgacat tctacctggt 240
tgcagacagg cttgtacttg agtcctggct tgttgaggat catctccag 289

<210> 1053
<211> 199
<212> DNA
<213> Homo sapien

<400> 1053
ccacgactgc atgcccgcgc ccgccaggtg atacctccgc cggtgaccca ggggctctgc 60
gacacaagga gtctgcatgt ctaagtgcta gacatgctca gctttgtgga tacgcggact 120
ttgttgctgc ttgcagtaac cttatgccta gcaacatgcc aatctttaca agaggaaacc 180
gtaagaaagg gcccagccg 199

<210> 1054
<211> 224
<212> DNA
<213> Homo sapien

<400> 1054
tcgaccctgt gaagcaggag acagatgctg cattttcact gttgtttgtc ctctgttttt 60
gtagcatccc cgggaacttc cccatcagcc aggggcttgt ccccaccacc cttcacctgg 120
ctttccagtt ggctgagacg ctgcttcatc ttcatctggg tggcgttgta ctcagccagg 180
aggcgtgcaa acctggtctg cagggcgtcc agggaggacc ccag 224

<210> 1055
<211> 390

<212> DNA
<213> Homo sapien

<400> 1055
cctcttatta gggctctggt agcggcggcg gcggaccctt ggggtctgga cgcaacggcg 60
gcgggagcat gaacgcccct ccagccttcg agtcgttctt gctcttcgag ggcgagaaga 120
agatcaccat taacaaggac accaaggtac ccaatgcctg tttattcacc atcaacaaag 180
aagaccacac actgggaaac atcattaaat cacaactcct aaaagacccg caagtgctat 240
ttgctggcta caaagtcccc cacccettgg agcacaagat catcatccga gtgcagacca 300
cgccggacta cagcccccag gaagcctttg ccaacgccat caccgacctc atcagtgagc 360
tgtccctgct ggaggagcgc tttcgggtgg 390

<210> 1056
<211> 450
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(450)
<223> n = A,T,C or G

<400> 1056
ccagcatcac cttttggtcc nnacactcca gggctgccag gagcaccagt gttacccgca 60
ggacctgggg gcccatcctt gcctggagaa ccgctgggac ctgggggtcc tgggttacca 120
ttactaccag gaggaccagg aagaccacga gcaccaggga agccagcagc accaggtcca 180
ccaggactgc cacgttcacc tttgacacct tggggaccag gaggaccagn angtccagaa 240
cctccagggg gtcctgcaac tccaggaggg cctccttcac ctttctcacc cggagcccct 300
ctttctcctt taccaccagg ttcaccattc tgtccaggag caccagggaa accagcaggt 360
cctggagggc cagtttnacc tctctcacca nggctaccac gaggtccagc tatacctgga 420
agtccggggg caccaccttc acccttacct 450

<210> 1057
<211> 337
<212> DNA
<213> Homo sapien

<400> 1057
tgagcggccg cccggcaggt cctcgcctgg agggccccgg gcagcacagg gaggacgagc 60
ttgtccagca gagggtctgg cagagggtcc cgcagaggtt tgggcagggg gtctgacatc 120
cctggctcct gctctggctc tggctgccgg gatttgcaca ggcccaggtg catacagatg 180
ccgtttgagt caatctggtt ctggaagtag tcgatgacca gggggaagta gtcgtcaagc 240
acttggttgc actggggcat gagcagcttc aaggggagga cgttgcactc ctgctccagg 300
aacttcctca tcgtgtcctg gaaaatggcc tccttgg 337

<210> 1058
<211> 237
<212> DNA
<213> Homo sapien

<400> 1058
ctggggactg ggaatgctag catatggtat ctcaagttgg ctctcagaac taaacgggga 60
taagggccta gaatggaaga gggaaccagc cagaccctca gtccttcctg tcctggactg 120
ggagccacag atgtccctgt gatctgtcac tgccctgatc tgggtcttca gccattaaag 180

ctcagtgtca tcttcagtca ccaacggggg tcttggtgtc cttccaaacc cctttgg 237

<210> 1059
<211> 210
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(210)
<223> n = A,T,C or G

<400> 1059
agcccatccc cccggctccc tcctagtctg ccctgcgtcc tctgtccccg ggtttcagag 60
acaacttccc aaagcacaaa gcagtttttc cccctagggg tgggaggaag caaaagactc 120
tgtacctact ttgtatgtgt ataataattt gagatgtttt taattattnn gattgctgga 180
ataaagcatg tggaaatgac ccaaaaaaaa 210

<210> 1060
<211> 564
<212> DNA
<213> Homo sapien

<400> 1060
ctggccacag agcccagcaa gtccttcctg ggagagaaga gttagggctg atactgaagg 60
tctctttcac atctgggcac acgtctgcct tcaggctgta agaatttcat ttgtcgattg 120
ttaaataaaa ccaggagaaa gcaatgcagg tctctgggaa tctcatccct tccataagga 180
aaatgctctg ccaattcaag tttcattcag tcaggaagac agaaggattt aaggcttcgg 240
tgacaattat aatcctctga gaaattattt ccccttaaag tcaagataag ataatagtgt 300
ttactgtact ttctcttgac tcttgaaatc cctggtattg ggtgtaggca acttgcacct 360
gcaatgaagt ccgcaggaga ggaaggtctc tcctcccccg aaagctatcc caggtcacat 420
gcgtggcgaa tgcccactga acctcggctc tcatggaagc aggaaagaca ccgagattca 480
agccttctag taggttgagg acgctgtgct catggcatct tcggagattt tggtactggc 540
aggggtggat gcttgcaaaa tact 564

<210> 1061
<211> 267
<212> DNA
<213> Homo sapien

<400> 1061
cctatggagg tgcctatgat gtcatgagct ctaagcacct ttgtggtgat accaactatg 60
cctggcccac cgcagagatt gcggtcatgg gagcaaaggg cgctgtggag atcatcttca 120
aagggcatga gaatgtggaa gctgctcagg cagagtacat cgagaagttt gccaacccctt 180
tccctgcagc agtgcgaggg tttgtggatg acatcatcca accttcttcc acacgtgccc 240
gaatctgctg tgacctggat gtcttgg 267

<210> 1062
<211> 603
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

<222> (1)...(603)
<223> n = A,T,C or G

<400> 1062
ctggtcatct tgtcatgtga agaccatctt cctacagagt ctaggctggc cgtcgttgaa 60
gtcctcacca gtactacacc acttttcctc accaaccccc atcctattct tgagttgcag 120
gatacacttg ctctctggaa gtgtgtcctt acccttctgc agagtgagga gcaagctgtt 180
agagatgcag ccacggaaac cgtgacaact gccatgtcac aagaaaatac ctgccagtca 240
acagagtttg ccttctgcca ggtggatgcc tccatcgctc tggccctggc cctggccgtc 300
ctgtgtgatc tgctccagca gtgggaccag ttggcccctg gactgcccat cctgctggga 360
tggctgttgg gagagagtga tgacctcgtg gcctgtgtgg agagcatgca tcaggtggaa 420
gaagactacc tgtttgaaaa agcagaagtc aactttgggg ccgagaccct gatctttgtg 480
aaatacctct gcaagcacct cttctgtctc ctctcaaaag tccggctggc gtnccccaag 540
ccctgagatg ctctgtcacc ttcaaaggat ggtgtcagag cagtgccacc tnctgtctca 600
gtt 603

<210> 1063
<211> 222
<212> DNA
<213> Homo sapien

<400> 1063
ccatcgtgga tcactgagat gcagtggcgg tccccgtagc tggcccgtgg catgccaccc 60
tggaagatgg tgaagggcaa cccctgccta gtggtcagcc ggaggattct ggtaatcgct 120
ttgcaaggaa agggaccgta aggcacgagg ctgcggaggg gctctggttg ctgggcttcg 180
ctggacacgg gccactggca gtagctgccg tcagagtgac ag 222

<210> 1064
<211> 72
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(72)
<223> n = A,T,C or G

<400> 1064
gatgatcaat atnnactgga acacatgcat gcttttggaa tgtataatta cctgcactgt 60
gattcatggt at 72

<210> 1065
<211> 251
<212> DNA
<213> Homo sapien

<400> 1065
gtggccgtga tggatagcga caccacaggc aagctgggct ttgaggaatt caagtacttg 60
tggaacaaca tcaaaaggtg gcaggccata tacaaacagt tcgacactga ccgatcaggg 120
accatttgca gtagtgaact cccaggtgcc tttgaggcag cagggttcca cctgaatgag 180
catctctata acatgatcat ccgacgctac tcagatgaaa gtgggaacat ggattttgac 240
aacttcatca g 251

<210> 1066

<211> 289
<212> DNA
<213> Homo sapien

<400> 1066
ctggagatga tcctcaacaa gccagggctc aagtacaagc ctgtctgcaa ccaggtggaa 60
tgtcatcctt acttcaacca gagaaaactg ctggatttct gcaagtcaaa agacattgtt 120
ctggttgcct atagtgctct gggatcccac cgagaagaac catgggtgga cccgaactcc 180
ccagtgctct tggaggaccc agtcctttgt gccttggcaa aaaagcacaa gcgaacccca 240
gccctgattg ccctgcgcta ccagctacag cgtggggttg tggtcctgg 289

<210> 1067
<211> 301
<212> DNA
<213> Homo sapien

<400> 1067
ctgtagttga ctgaagtcgc taaacaggac ggatttaagt agaggtgata tgtccagtca 60
ccggcataga gacgtcctct gcgtcaccat ccacacacag ggcttctggt agacatcagg 120
caaagctctc catgttaata ttcatctgaa tatggataat tagggtggct agcaaaacta 180
tcactgttaa aatagtggag atttctgtct aggccatcta tggctttcat gtcctccgca 240
gtcaactgga actcaaaaac ctgcacgttc tgtctgatgc gctgctcatt gtagctcttg 300
g 301

<210> 1068
<211> 255
<212> DNA
<213> Homo sapien

<400> 1068
ccagcagttc ctctttgcct tatatttgtg gtacgcccgg ccagccttca agatgggttt 60
gtcaattcgg ccacctccag ccaccacacc aaccacagct ctgttggctg aggagataac 120
cttcttggag ccggagggca gcttcacacg ggtcttcttg gtctcagggt tgtgggagat 180
aacggtggca tagttccctg atgcccgggc cagcttgcca cggtctccag gcttctcctc 240
caggcagcac acgat 255

<210> 1069
<211> 77
<212> DNA
<213> Homo sapien

<400> 1069
ctggacaggc tccagcaccg gcccaaacac gcccagacct cggcaggcac cacctggttc 60
tcccacccag aaagttc 77

<210> 1070
<211> 163
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(163)
<223> n = A,T,C or G

<400> 1070
ctgctgggat gnctgccaag tttttcagcc ataaggtagc gaaatctagc agaatccaga 60
ttacatccac ttccaatcac gcggtgtttg ggtaatccac ctagtttnna ggtaacatac 120
gtaagaatgt ccactgngtt ggaaacnnca attatgatgc aat 163

<210> 1071
<211> 246
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(246)
<223> n = A,T,C or G

<400> 1071
ctgaccggac cggncatgcc cgtccggaac gtctataaga aggagaaagc tcgagtcatc 60
actgaggaag agaagaattt caaagccttc gctagtctcc gtatggcccg tgccaacgcc 120
cggctcttcg gcatacgggc aaaaagagcc aaggaagccg cagaacagga tgttgaaaag 180
aaaaaataaa gccctcctgg ggacttggaa tcagtcggca gacaaaaaaa aaaaaaaaaa 240
aacaaa 246

<210> 1072
<211> 224
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(224)
<223> n = A,T,C or G

<400> 1072
ctgccctgac agagcgctcc ttgatgggca tggactggaa aggatcccag gaatacaaga 60
aggcagaaaa aaaagtttgg aagatcttta aatctgacag tgaagtggct ggttacatcc 120
ggcaagcggg tgacttccat cangtaatta ttcgaggtgg aggacatatt ttaccctatg 180
accagcctct gagagctttt gacatgatta atcgattcat ttat 224

<210> 1073
<211> 301
<212> DNA
<213> Homo sapien

<400> 1073
ctgtagttga ctgaagtcgc taaacaggac ggatttaagt agaggtgata tgtccagtca 60
ccggcataga gacgtcctct gcgtcaccat ccacacacag ggcttctggt agacatcagg 120
caaagctctc catgttaata ttcatctgaa tatggataat tagggtggct agcaaaacta 180
tcactgttaa aatagtggag atttctgtct aggccatcta tggctttcat gtcctctgca 240
gtcaactgga actcaaaaac ctgcacgttc tgtctgatgc gctgctcatt gtagctcttg 300
g 301

<210> 1074
<211> 132

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(132)
<223> n = A,T,C or G

<400> 1074
caagcttttt tttttttttt tttttttttt ttcgctcaaa nactttnttt tattantaca 60
tgggctggna ttgatggnaa gggacaaatg tanttggcaa ccatggttag catcggatgc 120
ccatcccaat gg 132

<210> 1075
<211> 301
<212> DNA
<213> Homo sapien

<400> 1075
ctgtagttga ctgaagtcgc taaacaggac ggatttaagt agaggtgata tgtccagtca 60
ccggcataga gacgtcctct gcgtcaccat ccacacacag ggcttctggt agacatcagg 120
caaagctctc catgttaata ttcatctgaa tatggataat tagggtggct agcaaaacta 180
tcactgttaa aatagtggag atttctgtct aggccatcta tggctttcat gtcctctgca 240
gtcaactgga actcaaaaac ctgcacgttc tgtctgatgc gctgctcatt gtagctcttg 300
g 301

<210> 1076
<211> 436
<212> DNA
<213> Homo sapien

<400> 1076
ctgctgggat gaatgccaag tttttcagcc ataaggtagc gaaatctagc agaatccaga 60
ttacatccac ttccaatcac gcggtgtttg ggtaatccac ctagtttcca ggtaacatac 120
gtaagaatgt ccactgggtt ggaaaccaca attatgatgc aatcaggact gtacttgacg 180
atctgaggaa taatgaattt gaagacatta acatttctct gcaccagatt gagccgactc 240
tccccttctt gctgacggac tcctgcagtt actactacaa tcttagaatt ggcggtcaca 300
gaataatctt tatctgccac aattttaggt gtctgaagaa ataagctccc atgctgcaga 360
tccatcattt ctcctttaag cttatcttcc aaaacatcca caagagcaag ttcatcagcc 420
agagactttc ccagaa 436

<210> 1077
<211> 256
<212> DNA
<213> Homo sapien

<400> 1077
ctgaagatta ataggaaaca gtgaaaaagc aacgtcctgt gatcagtaac tttaaagaca 60
agcttggttc tctctttctg gcactactga cattcccacc attctagctt ccgaattctg 120
gaaaaagaga agatgattaa caaaaataga gaatgtagaa acttctggtt ttgtgcctac 180
aggattggca ccagaccctc agtgctcact tgctccatct acaaggcagc acccctccca 240
gaggcagcca gggagg 256

<210> 1078

<211> 202
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(202)
<223> n = A,T,C or G

<400> 1078
ctgtgctncn caaccagatc catgtnaagt gccccgccca gagaagggag ccagggggag 60
ctgactncag ncaacancca gtgnccggat gancaccaac atgtgagggg tgaaccttgg 120
cctccangac atntgcaccc cctncccacc tccacggacc tcggacctcc aggcggctca 180
gtgctgcctg cggcccagct aa 202

<210> 1079
<211> 170
<212> DNA
<213> Homo sapien

<400> 1079
gcgcttctcg ggcaccgtca ggcttaagtc cactccccgc cctaagttct ctgtgtgtgt 60
cctgggggac cagcagcact gtgacgaggc taaggccgtg gatatccccc acatggacat 120
cgaggcgctg aaaaaactca acaagaataa aaaactggtc aagaagctgg 170

<210> 1080
<211> 494
<212> DNA
<213> Homo sapien

<400> 1080
cctgcggcaa agagatgcgc ttattgagaa acatggctta gttataatcc ccgatggcac 60
tcccaatggt gatgtcagtc atgaaccagt ggctggagcc atcactgttg tgtctcagga 120
agctgctcag gtcttggagt cagcaggaga agggccatta gatgtaaggc tacgaaaact 180
tgctggagag aaggaagaac tactgtcaca gattagaaaa ctgaagcttc agttagagga 240
ggaacgacag aaatgctcca ggaatgatgg cacagtgggt gacctggcag gactgcagaa 300
tggctcagac ttgcagttca tcgaaatgca gagagatgcc aatagacaaa ttagcgaata 360
caaatttaag ctttcaaaag cagaacagga tataactacc ttggagcaaa gtattagccg 420
gcttgaggga caggttctga gatataaaac tgctgctgag aatgctgagg aaagttgaag 480
atgaattgaa agca 494

<210> 1081
<211> 123
<212> DNA
<213> Homo sapien

<400> 1081
ctgctgctat taagttgcaa gctctacagc tagctacatg actgatggat cagtttgaga 60
tttgttccct tgtcaaaagt ttaactctga tagaaggttg gcctcacatt ctgatgtttg 120
gac 123

<210> 1082
<211> 297
<212> DNA

<213> Homo sapien

<400> 1082
cctgcacttg aacatggctt tggttttaag caacttctct accctgaccc tcctcctggg 60
acagcgtttc gggaggtttc ttggcctcac tgagagggat gtggagctgc tgtaccccgt 120
caaggagaag gtattctaca gcctgatgag ggagagcggc tacatgcaca tccagtgcac 180
caagcctgac accgtaggct ctgctctgaa tgactctcct gtgggtctgg ctgcctatat 240
tctagagaag ttttccacct ggaccaatac ggaattccga tacctggagg atggagg 297

<210> 1083
<211> 452
<212> DNA
<213> Homo sapien

<400> 1083
ctgggccacg aggacaccac cagcttggat cggcctcgcc gtgtggaata ctttgtagat 60
aagcaactcc aagtaaaggc tgtcacctgt gggccgtgga acacctacgt gtatgctgtg 120
gagaaaggga agagctgaca tgtgtacgta tatgtatatg caacacctgt gagacccccca 180
ttcaggtcaa ggaaaaccat tgcctgcacc ccaagggccc catatttgcc cctccccatc 240
acagtcctgc ccttcaccct caagcacggt cctaaacttg tctgcacttt agaaacacct 300
ggagagcatt gaaaactctg ctgcctaagg tcagcatcaa tcaaaacaat gaaatcaatg 360
aaacaatgaa accagagctt ctaggtgtgt ggcctggata gtggtagatt caaagctcca 420
cccacctcat cccaggtaca tttgatgtgc ag 452

<210> 1084
<211> 301
<212> DNA
<213> Homo sapien

<400> 1084
ctgtagttga ctgaagtcgc taaacaggac ggatttaagt agaggtgata tgtccagtca 60
ccggcataga gacgtcctct gcgtcaccat ccacacacag ggcttctggt agacatcggg 120
caaagctctc catgttaata ttcatctgaa tatggataat tagggtggct agcaaaacta 180
tcactgttaa aatagtggag atttctgtct aggccatcta tggctttcat gtcctctgca 240
gtcaactgga actcaaaaac ctgcacgttc tgtctgatgc gctgctcatt gtagctcttg 300
g 301

<210> 1085
<211> 369
<212> DNA
<213> Homo sapien

<400> 1085
ctgtttccca tgggccacca ggcggctcag gacagcaaac gtctcatccc ctctcaggat 60
gtacttctcc atgtcctgct cgatccactg gtacatgagg cccttcacat gcacgtctcg 120
gatggcgtcc gtcacgtcct tgtagagatg tgcttggtca aactccaggc tgtggcccag 180
aaagtagtcc accacacagg acagcagagc catctccggt agcgagaaga tgtccatgaa 240
ctgcttaatg gagggaccct tgccatagaa gccactcatc tggtatagtg ggatgtgctg 300
ggtaccccca tacagctcaa tcacctcctc gtctggcaca ggctggaggc ccctgtaggc 360
tgtccccag 369

<210> 1086
<211> 316
<212> DNA

<213> Homo sapien

<400> 1086
cctcagaggt ttctccacag tcctcttctg ggcaaattct tgtttcttca catgccggac 60
tagcttaaga ccaatgcagt agcttatttc caagccttgc aaagtatata atatctaaga 120
ggaaaggttt tgtcatccca gcgttgtcca ctttgtgggg ctttgtaggt agacggagcc 180
acactacagg cagggtatga gcagagggat gtatggagtg tgggtgactc tgagcctcac 240
tgccgctgca aggtggggaa actgtaagtg aacccctgtg ggtgcggggg agggtatccg 300
gtgcgcaggg aggtgg 316

<210> 1087
<211> 329
<212> DNA
<213> Homo sapien

<400> 1087
cctgcagggg atgggacctt ccagaagtgg gcgtctgtgg tggtgccttc tggacaggag 60
cagagataca cctgccatgt gcagcatgag ggtctgccca agcccctcac cctgagatgg 120
gagccgtctt cccagcccac catccccatc gtgggcatca ttgctggcct ggttctcttt 180
ggagctgtga tcgctggagc tgtggtcgct gctgtgatgt ggaggaggaa gagctcagat 240
agaaaaggag ggagctactc tcaggctgca agcagtgaca gtgcccaggg ctctgatatg 300
tctcccacag cttgtaaagt gtgagacag 329

<210> 1088
<211> 342
<212> DNA
<213> Homo sapien

<400> 1088
ccactcactg ctgggaccca ggcacctccc ttctccatcc tctctggatt gtcagtaatg 60
tcctggaaca gaagcctgtg ggatggcctt gggcacggag aagccctggg gtcagtgtcg 120
tgcacggatg gcggcagtgt tgaacccagg aggctgaacc cggcccacca cggaagatga 180
gtgcatggca accgcctgcc ttcacgtcgc tccacttggt aaccccaagg tctgggctgt 240
tctaggtatt gcttcacgtg ccccagcaag cccttaacaa gagggcctgg ttccctgaag 300
aaccaatccc aggaaggggc cttgatccct ccgccttgct ga 342

<210> 1089
<211> 51
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(51)
<223> n = A,T,C or G

<400> 1089
ccttgtgttc agtctccncg ctcttcttgc cactgttgag ggtggagatg t 51

<210> 1090
<211> 515
<212> DNA
<213> Homo sapien

<400> 1090
cctggggagg ccctagggga gcaccgtgat ggagaggaca gagcaggggc tccagcacct 60
tctttctgga ctggcgttca cctccctgct cagtgcttgg gctccacggg caggggtcag 120
agcactccct aatttatgtg ctatataaat acgtcagatg tacatagaga tctatttttt 180
ctaaaacatt cccctcccca ctcctctccc acagagtgct ggactgttcc aggccctcca 240
gtgggctgat gctgggaccc ttaggatggg gctcccagct cctttctcct gtgaatggag 300
gcagagacct ccaataaagt gccttctggg ctttttctaa cctttgtctt agctacctgt 360
gtactgaaat ttgggccttt ggatcgaata tggtcaagag gttggagggg aggaaaatga 420
aggtctacca ggctgagggt gagggcaaag gctgacgaag agggaaagtt acagatttcc 480
tgtagcaggt gtgggcttac agacacatgg actgg 515

<210> 1091
<211> 277
<212> DNA
<213> Homo sapien

<400> 1091
gcgtcccgga gcccacggtg gtcatggctg ccagagcgct ctgcatgctg gggctggtcc 60
tggccttgct gtcctccagc tctgctgagg agtacgtggg cctgtctgca aaccagtgtg 120
ccgtgccagc caaggacagg gtggactgcg gctacccccca tgtcaccccc aaggagtgca 180
acaaccgggg ctgctgcttt gactccagga tccctggagt gccttggtgt ttcaagcccc 240
tgcaggaagc agaatgcacc ttctgaggca cctccag 277

<210> 1092
<211> 368
<212> DNA
<213> Homo sapien

<400> 1092
cctgggcccg ctgacttcag ggtgaggcca cagctactgc agcgcttttt atttatttat 60
ttatttactg agatggagtc ttgctctgtc acccaggctg gagtgcagtg gtgcaatctc 120
ggctcactgc aacctctgcc tcctgggctg cagtgattct cctgcgttca agtaattctc 180
ctgcctcggc cttctgagta gttgggatta caggcatatg ccaccacact tggctaattt 240
tttgtatttt tagtagaaat ggggtttcac catgttggcg aggctggtct cgaactcctg 300
acctcaagga tcctcctgcc tcggcctcct aaggtgctgg gattgcaggt gtgagccacc 360
acgtctgg 368

<210> 1093
<211> 459
<212> DNA
<213> Homo sapien

<400> 1093
ctgtgcatgg agccatttgg atggcggcgg gcgggggggg attctctgta tcaggagtga 60
ctttgttgcc ccacacagcc tcctgctgca ggtgctttgg aaagagatgc tgccttggag 120
ctggtgaatc tgtggaccac attcaagggt gtggcacagg catcttccca tcctttttcac 180
tccgaatcgc tggcgacaca ttctcctttc cagctaggaa agggttcctc gcggctggtt 240
tagattgtgg ttgtttgttt tgcttctact aagactgttt tgtttcaaaa aggaaacaag 300
ttttgtgttt gctgtctacg ctggagtcct gaactgtggg tagaaaacac gacctggctt 360
tgtagaaagg acacagggct gttttatgaa ctaagcggtg aggctcaggt ggcggctctc 420
acagagcccc tgatgctgtt gttctttgag ggcttaagg 459

<210> 1094
<211> 610

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(610)
<223> n = A,T,C or G

<400> 1094
ccatgcaaaa ggaggtggtg cactcagtgc agtcgctgcc acaaaaagtc cgattatttt 60
cattggtaca ggggaacata tagatgactt tgaacctttc aaaacacagc cttttattag 120
caaacttctt ggtatgggcg acattgaagg actgatagat aaagtcaacg agttgaagtt 180
ggatgacaat gaagcactta tagagaagtt gaaacatggt cagtttacgt tgcgagacat 240
gtatgagcaa tttcaaaata tcatgaaaat gggccccttc agtcagatct tggggatgat 300
ccctggtttt gggacagatt ttatgagcaa aggaaatgaa caggagtcaa tggcaaggct 360
aaagaaatta atgacaataa tggatagtat gaatgatcaa gaactagaca gtacggatgg 420
tgccaaagtt tttagtaaac aaccaggaag aatccaaaga gtagcaagag gatcgggtgt 480
atcaacaaga gatgttcgag aacttttgac acaatatacc aagtttgcac agatggtaaa 540
aaagatggga ggtatcaaag gacttttcaa aggtgggcga catgtctaan aatgtgagcc 600
agtcacagat 610

<210> 1095
<211> 232
<212> DNA
<213> Homo sapien

<400> 1095
ccttatttct cttgtccttt cgtacaggga ggaatttgaa gtagatagaa accgacctgg 60
attactccgg tctgaactca gatcacgtag gactttaatc gttgaacaaa cgaaccttta 120
atagcggctg caccatcggg atgtcctgat ccaacatcga ggtcgtaaac cctattgttg 180
atatggactc tagaatagga ttgcgctgtt atccctaggg taacttgttc cg 232

<210> 1096
<211> 377
<212> DNA
<213> Homo sapien

<400> 1096
ccacgctcat ggaaaccacc caaggacagc cagagtccac attccctggc aagctgggtg 60
tattcttcca aaagtttccc acccagtggt tcagacaggt gtagcgtctc tgcagggtcc 120
cgtgcaatga agtcaaatgc ctcaggcagg aaagccaggc aggcacccag tctggcagcc 180
tctcgaacca gcccagcaca tgttttaaag ttctgttgct tgtctggcgt cgatgttacc 240
tggcacacag ccaccagggg cagttcgcag gaggaagagg agatagccat ggctctgggc 300
ctgggctgag cacaaagtac tgagagttga ggtatccgga gtccaggaca cagaagggac 360
aggaatctgt gaggagg 377

<210> 1097
<211> 311
<212> DNA
<213> Homo sapien

<400> 1097
ccacgccatg gggctggagc actcccaaga ccctggggcc ctgatggcac ccatttacac 60
ctacaccaag aacttccgtc tgtcccagga tgacatcaag ggcattcagg agctctatgg 120

ggcctctcct gacattgacc ttggcaccgg ccccaccccc acactgggcc ctgtcactcc 180
tgagatctgc aaacaggaca ttgtatttga tggcatcgct cagatccgtg gtgagatctt 240
cttcttcaag gaccggttca tttggcggac tgtgacgcca cgtgacaagc ccatggggcc 300
cctgctggtg g 311

<210> 1098
<211> 404
<212> DNA
<213> Homo sapien

<400> 1098
ccacccacgc ttaggttccc atcacactga tgactccggg tttggcgagc acaggagcgc 60
aaaccttttc acattctttc tgtgatccaa atttgttttc gtttccacca caacctccat 120
accagaatct tgcacagctt ttggtgtttg gatcatagta ccattttaat atgaaatccc 180
tgcaagttcc ttcgtctttc ggcaacttgc atatatctgt ttcagtgaga gccaatggtt 240
ctgtgctcac cattagattg atggttgaac tagaagctga ccttgctggc tgtggaggtg 300
ggggctgaga tttctttgta ctgaaacttc cgtggtaggt ggctctgacc tgagacctca 360
ggtagcagac cacagccaca tggtatgtct gcccagcgag cagg 404

<210> 1099
<211> 442
<212> DNA
<213> Homo sapien

<400> 1099
ccatgggatg gctcttctga ccattggggg ccaggccagg ccaggccagg cttagggtag 60
caaggaccag gccaaagggg cagggcctcc tttggagggg ttgaggggta catcctcggc 120
tggtgtttgc atccaggggt ccagcaggat ctcttccagt gagggtcggg aagaaggttt 180
gggggccagg caccggcgga ttagggcaca gcagtctggg gagacatggg ctgggaagtg 240
gagctcagct tccagaatct cctggtccct ctcaaaggga atgtccccac acaccatgtc 300
atagaggagg atgcccagtg accagacagt ggccgggagt gcatggtact ggtgtcgaga 360
gatccactct ggggggctgt acacccttgt cccatcaaag tcagtgtagg gttcatcatg 420
aagcagggca ccaggaacca aa 442

<210> 1100
<211> 191
<212> DNA
<213> Homo sapien

<400> 1100
ccacgaaaat caatgagaag ccacaggtga tcgcggacta tgagagcgga cgggccatac 60
ccaataacca ggtgcttggc aaaatcgagc gggccattgg cctcaagctc cggggaaagg 120
acattggaaa gcccatcgag aaggggccta gggcgaaatg aacacaaagc ctcgaaatca 180
gtgcgctcca g 191

<210> 1101
<211> 178
<212> DNA
<213> Homo sapien

<400> 1101
cgggtacttt ggtggacatg aaggaactgg gcatatggga gccattggct gtgaagctgc 60
agacttataa gacagcagtg gagacggcag ttctgctact gcgaattgat gacatcgttt 120
caggccacaa aaagaaggc gatgaccaga gccggcaagg cggggctcct gatgctgg 178

<210> 1102
<211> 209
<212> DNA
<213> Homo sapien

<400> 1102
agccaggcta gtgacagaaa tggattcgaa atatcagtgt gtgaagctga atgatggtca 60
cttcatgcct gtcctgggat ttggcaccta tgcgcctgca gaggttccta aaagtaaagc 120
tttagaggcc accaaattgg caattgaagc tggcttccgc catattgatt ctgctcattt 180
atacaataat gaggagcagg ttggactgg 209

<210> 1103
<211> 396
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(396)
<223> n = A,T,C or G

<400> 1103
ctatagggct cgagggccgc ccgggcaggt ggtgcctcta atactggtga tgctagaggt 60
gatgttttg gtaaacaggc ggggtaagat ttgccgagtt ccttttactt tttttaacct 120
ttccttatga gcatgcctgt gttgggttga cagtgggggt aataatgact tgttggttga 180
ttgtagatat tgggctgtta attgtcagtt cagcgtttta atctgacgca ggcttatgca 240
gaggagaatg ttttcatgtt acttatacta acattagttc ttctataggg tgatagattg 300
gtccaattgg gtgtgaggag ttcagttata tgtttgggat tttttaggta ntgggtgttg 360
agcttgaacg ctttcttaat tggtggctgc tttagg 396

<210> 1104
<211> 342
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(342)
<223> n = A,T,C or G

<400> 1104
ctgctgatac ccaggcagta gctgatgctg tcacctacca gctcggtttc cacagcattg 60
aactgaatga gcctccactg gtccacacag cagccagcct ctttaaggag atgtgttacc 120
gataccggga agacctgatg gcgggaatca tcatcgcagg ctgggaccct caagaaggag 180
ggcaggtgta ctcagtgcct atgggggta tgatggtaag gcantncttt gccattggag 240
gctccgggag ctcctacatc tatggctatg ttgatgctac ctaccgggaa ggcatgacca 300
angaagagtg tctgcaattc actgccaatg ctctcgcttt gg 342

<210> 1105
<211> 551
<212> DNA
<213> Homo sapien

<400> 1105
ctggggccac tgtcggcatc atgattggag tgctggttgg ggttgctctg atatagcagc 60
cctggtgtag tttcttcatt tcaggaagac tgacagttgt tttgcttctt ccttaaagca 120
tttgcaacag ctacagtcta aaattgcttc tttaccaagg atatttacgg aaaagactct 180
gaccagagat cgagaccatc ctagccaaca tcgtgaaacc ccatctctac taaaaataca 240
gaaattagct ggacatggtg gcatgtgcct gtaatcccag ctactcagga ggctgaggca 300
ggagaactgc ttgaacaggg acccgggagg cggagattgg agtgagccga gatcgcgcca 360
ctgcactcca gtctgggcta cacagtgaga ctctgtctca agaaaaataa acagaagaat 420
tgggggttgg gggtgggaaa cagtgtttcc aggcagagag aacagcacgt acaaaggaga 480
ctgttgggag ggttaaatga aataattcat gtaaggtact tagtaccaca catgaatttc 540
acaagcagca g 551

<210> 1106
<211> 280
<212> DNA
<213> Homo sapien

<400> 1106
ctgctcttca cacagggttc tggggaaaac aaggaagaga tcatcaatta tgaatttgac 60
accaaggacc tggtgtgcct gggcctgagc agcatcgttg gcgtctggta cctgctgagg 120
aagcactgga ttgccaacaa cctttttggc ctggccttct cccttaatgg agtagggctc 180
ctgcacctca acaatgtcag cactggctgc atcctgctgg gcggactctt catctacgat 240
gtcttctggg tatttggcac caatgtgatg gtgacagtgg 280

<210> 1107
<211> 570
<212> DNA
<213> Homo sapien

<400> 1107
ctgattagtg tctaaggaat ggtccaatac tgttgccctt ttccttgact attacactgc 60
ctggaggata gcagagaagc ctgtctgtac ttcattcaaa aagccaaaat agagagtata 120
cagtcctaga gaattcctct atttgttcag atctcataga tgaccccag gtattgtctt 180
ttgacatcca gcagtccaag gtattgagac atattactgg aagtaagaaa tattactata 240
attgagaact acagctttta agattgtact tttatcttaa aagggtggta gttttcccta 300
aaatacttat tatgtaaggg tcattagaca aatgtcttga agtagacatg gaatttatga 360
atggttcttt atcatttctc ttcccccttt ttggcatcct ggcttgcctc cagttttagg 420
tcctttagtt tgcttctgta agcaacggga acacctgctg agggggctct ttccctcatg 480
tatacttcaa gtaagatcaa gaatcttttg tgaaattata gaaatttact atgtaaatgc 540
ttgatggaat tttttcctgc tagtgtagct 570

<210> 1108
<211> 386
<212> DNA
<213> Homo sapien

<400> 1108
ctgttcctgc ggtgacactg tataaacacg atgaccctgc cttgacttta gttgctggtc 60
ttacatcaaa taagcccaca gacaaactcc gtgccctgcc tctgtggtta tctttacaat 120
acttgggact tgatgggttt gtggagagga tcaagcatgc ctgtcaactg agtcaacggt 180
tgcaggaaag tttgaagaaa gtgaattaca tcaaaatctt ggtggaagat gagctcagct 240
ccccagtggt ggtgttcaga tttttccagg aattaccagg ctcagatccg gtgtttaaag 300
ccgtcccagt gcccaacatg acaccttcag gagtcggccg ggagaggcac tcgtgtgacg 360
cgctgaatcg ctggctggga gaacag 386

<210> 1109
<211> 409
<212> DNA
<213> Homo sapien

<400> 1109
ctctggtctg taaccagtct cttcaaggca ttatctcctg gggccaggat ccgtgtgcga 60
tcacccgaaa gcctggtgtc tacacgaaag tctgcaaata tgtggactgg atccaggaga 120
cgatgaagaa caattagact ggacccaccc accacagccc atcaccctcc atttccactt 180
ggtgtttggt tcctgttcac tctgttaata agaaacccta agccaagacc ctctacgaac 240
attctttggg cctcctggac tacaggagat gctgtcactt aataatcaac ctggggttcg 300
aaatcagtga gacctggatt caaattctgc cttgaaatat tgtgactctg ggaatgacaa 360
cacctggttt gttctctgtt gtatccccag ccccaaagac agctcctgg 409

<210> 1110
<211> 215
<212> DNA
<213> Homo sapien

<400> 1110
ccattttgga gtgtgtccat tgggtagcaa tgtggaaacc accagggcct ttgtggagaa 60
aatggagggg gttgagggag tcccaggagg ggcttatttg agggcctttg ccacttgctc 120
ataggcgagc tcgatctcct catcatctgg acaggtggaa gcgaattctt cccgggcgta 180
ggcattgctc aagtaccgat gcactccccg gaagg 215

<210> 1111
<211> 308
<212> DNA
<213> Homo sapien

<400> 1111
cctgggcccg ctgacttcag ggtgaggcca cagctactgc agcgcttttt atttatttat 60
ttatttactg agatggagtc ttgctctgtc acccaggctg gagtgcagtg gtgcaatctc 120
ggctcactgc aacctctgcc tcctgggctg cagtgattct cctgcgttca agtaattctc 180
ctgcctcggc cttctgagta gttgggatta caggcatatg ccaccacact tggctaattt 240
tttgtatttt tagtagaaat ggggtttcac catgttggcg aggctggtct cgaactcctg 300
acctcaag 308

<210> 1112
<211> 177
<212> DNA
<213> Homo sapien

<400> 1112
ccactggctc cctgggccag ggcctcgggg ccgcttgtgg gatggcctac accggcaaat 60
acttcgacaa ggccagctac cgagtctatt gcttgctggg agacggggag ctgtcagagg 120
gctctgtatg ggaggccatg gccttcgcca gcatctataa gctggacaac cttgtgg 177

<210> 1113
<211> 646
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(646)
<223> n = A,T,C or G

<400> 1113
ccccaccatg gacacacttt gctacacact cctgctgctg accacccctt cctgggtctt 60
gtcccaggtc accttgaagg agtctggtcc tgtactggtg aaacccacag agaccctcac 120
gctgacctgc accgtctctg ggttttcact cagtaatatt agagtgggtg tgagttggat 180
ccgtcagccc ccagggaagg ccctggagtg gtttgcatac atttttcga ctgacgaaaa 240
atccttcaat tcatctctga agaacaggct caccatctcc aaggacacct ctaaaagcca 300
ggtggtcctt agcatgacca acatggaccc tgtggacaca gccacatatt actgtgcacg 360
gctctctatt tacttcgggg agttagaaac ctaccaatac atggacgtct ggggcaaagg 420
gaccaccgcc accgtctcct cagcatcccc gaccagcccc aaggtcttcc cgctgagcct 480
ctgcagcacc cagccagatg ggaacgtggt catcgcctgc ctggtccang gcttcttccc 540
ccaggagcca ctcagtgtga cctggagcga aagcggacan ggcgtgaccg ccagaaactt 600
ccccacccag ccaggatgcc tncggggacc tgtacaccac gagcag 646

<210> 1114
<211> 420
<212> DNA
<213> Homo sapien

<400> 1114
tgttgtttta ctcacctaac ccttagaaaa tgaatgttag aaggtgcctg ccgaggcggg 60
acagagtgtt cgctcgcgct ggagaaggct ctgctcagcc ctgagagtcc cttcctgccc 120
caccgatact ggcactttaa aaaggaagct gaccgcacag tgtccagacg aattggcccc 180
cagaagatgg ggagttctgt cctgcccttc tgtgtctgcg tgacctcacc cagcctagga 240
gggaggtgca ttcagggtag atttgcctct cattcaaagt tctggggctt tgggtggaaa 300
acagccagct ttggcgctgt tggggagact cctccagacc aggaacccca gaaggagaca 360
gagcctgcca catcctccca cgccaggccc tgggccaggg tgattggact gagaatttgg 420

<210> 1115
<211> 416
<212> DNA
<213> Homo sapien

<400> 1115
ctgaaagttt ctaaaataga aacctggtgc atatggcccc aaaacaccac atgctttgat 60
tacactcagg gagcatgagt tgcctatttg ggtgagaaaa tcccatgtta cagtgcgatc 120
gctgggcacg ttttggagta attccagcca ctgctatgta agtgttttta attcaggggt 180
gtcttctacg ttttcatctt ctgaatatct tgtgacggtg caggtttgag caaaactggc 240
atgaaatgag agctgtttta gatgaagatt gcaagatgga tggcttggcc cacagtggca 300
gtgggttggg ggtggaatgt ggacaattag gaaaaaggca tgtcattcta tctggctcct 360
ggagaggcag atagtcctgg gggctttggt gtcacagttc ccaaaagcaa ggttgg 416

<210> 1116
<211> 382
<212> DNA
<213> Homo sapien

<400> 1116
ccttatttct cttgtccttt cgtacaggga ggaatttgaa gtagatagaa accgacctgg 60
attactccgg tctgaactca gatcacgtag gactttaatc gttgaacaaa cgaaccttta 120

atagcggctg caccatcggg atgtcctgat ccaacatcga ggtcgtaaac cctattgttg 180
atatggactc tagaatagga ttgcgctgtt atccctaggg taacttgttc cgttggtcaa 240
gttattggat caattgagta tagtagttcg ctttgactgg tgaagtctta gcatgtactg 300
ctcggaggtt gggttctgct ccgaggtcgc cccaaccgaa aatttttaat gcaggcttgg 360
tagtttagga cctgtgggtt tg 382

<210> 1117
<211> 370
<212> DNA
<213> Homo sapien

<400> 1117
ctgcgtgtct gaaaaccaaa gatttaaaac atagtaatta ttgaacctca gaagaaaaac 60
tcagattgaa agagcttaga ataagaccct ttttgagttg agaaaggtga gtacttagat 120
ttttcatttg ctttgtttgg gattacttac atcagtattt tatgttgatc agaaagaaag 180
gattcaatta gctattgttc ggttaataaa aatgtcagcc actgtaggag taagttggat 240
gtccagcctt tttagattgc ttaacttgga aacactggac tgggagcggt ggctcatgcc 300
tgtgatccca gcactctggg aggccaaggc aggcagatca ctggaggtca ggagtttgag 360
accaacctgg 370

<210> 1118
<211> 494
<212> DNA
<213> Homo sapien

<400> 1118
ctgtctctta cttttaacca gtgaaattga cctgcccgtg aagaggcggg cataacacag 60
caagacgaga agaccctatg gagctttaat ttattaatgc aaacagtacc tgacaaaccc 120
acaggtccta aactaccaga cctgcattaa aaatttcggt tggggcgacc tcggagcaga 180
acccaacctc cgagcagtac atgctaagac ttcaccagtc aaagcgaact actatactca 240
attgatccaa taacttgacc aacggaacaa gttaccctag ggataacagc gcaatcctat 300
tctagagtcc atatcaacaa tagggtttac gacctcgatg ttggatcagg acatcccgat 360
ggtgcagccg ctattaaagg ttcgtttgtt caacgattaa agtcctacgt gatctgagtt 420
cagaccggag taatccaggt cggtttctat ctacttcaaa ttcctccctg tacgaaagga 480
caagagaaat aagg 494

<210> 1119
<211> 407
<212> DNA
<213> Homo sapien

<400> 1119
ccttatgact acaacggccc acgagaaaaa tatggaatcg ttgattacat gatcgagcag 60
tccgggcctc cctccaagga gattctgacc ctgaagcagg tccaggagtt cctgaaggat 120
ggagacgatg tcatcatcat cggggtcttt aagggggaga gtgacccagc ctaccagcaa 180
taccaggatg ccgctaacaa cctgagagaa gattacaaat ttcaccacac tttcagcaca 240
gaaatagcaa agttcttgaa agtctcccag ggcagtcgg ttgtaatgca gcctgagaaa 300
ttccagtcca agtatgagcc ccggagccac atgatggacg tccagggctc cacccaggac 360
tcggccatca aggacttcgt gctgaagtac gccctgcccc tggttgg 407

<210> 1120
<211> 548
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(548)
<223> n = A,T,C or G

<400> 1120
ccccagagga cccgttggac ccagtggacc tcctggcaaa gatggaacca gtggacatcc 60
aggtcccatt ggaccaccag ggcctcgagg taacagaggt gaaagaggat ctgagggctc 120
cccaggccac ccagggcaac caggccctcc tggacctcct ggtgcccctg gtccttgctg 180
tggtggtgtt ggagccgctg ccattgctgg gattggaggt gaaaaagctg gcggttttgc 240
cccgtattat ggagatgaac caatggattt caaaatcaac accgatgaga ttatggcttc 300
actcaagtct gttaatggac aaatagaaag cctcattagt cctgatggtt ctcgtaaaaa 360
cccagctaga aactgcagag acctgaaatt ctgccatcct gaactcaaga gtggagaata 420
ctgggttgac cctaaccaag gatgcaaatt ggatgctatc aaggtattct gtaatatgga 480
aactggggaa acatgcataa gtgccaatcc ttngaatgtt ccacggaaac actggtggac 540
agattcta 548

<210> 1121
<211> 278
<212> DNA
<213> Homo sapien

<400> 1121
cggccgaggt ccgccatggc gtgtgctcgc ccactgatat cggtgtactc cgaaaagggg 60
gagtcatctg gcaaaaatgt cactttgcct gctgtattca aggctcctat tcgaccagat 120
attgtgaact ttgtttacac caacttgcgc aaaaacaaca gacagcccta tgctgtcagt 180
gaattagcag gtcatcagac tagtgctgag tcttggggta ctggcagagc tgtggctcga 240
attcccagag ttcgaggtgg tgggactcac cgctctgg 278

<210> 1122
<211> 591
<212> DNA
<213> Homo sapien

<400> 1122
ctgcagcggc agaggcagca tccagcggcg gcgccagcag ttccagtccg ttgctttact 60
ttttgcttca ccgacatagt cattatgccg aagagaaagt ctccagagaa tacagagggc 120
aaagatggat ccaaagtaac taaacaggag cccacaagac ggtctgccag attgtcagcg 180
aaacctgctc caccaaaacc tgaacccaaa ccaagaaaaa catctgctaa gaaagaacct 240
ggagcaaaga ttagcagagg tgctaaaggg aagaaggagg aaaagcagga agctggaaag 300
gaaggcacag aaaactgaat ctgtagataa cgagggagaa tgaattgtca tgaaaaattg 360
gggttgattt tatgtatctc ttgggacaac ttttaaaagc tatttttacc aagtattttg 420
taaatgctaa tttttagga ctctactagt tggcatacga aaatatataa ggatggacat 480
tttatcgtct catagtcatg ctttttggaa atttacatca tcctcaagta aaataaatat 540
cagttaaata ttggaagctg tgtgtaagat tgattcagca ttccatgcac t 591

<210> 1123
<211> 454
<212> DNA
<213> Homo sapien

<400> 1123
ccaattgaaa caaacagttc tgagaccgtt cttccactac tgattaagag tggggtggca 60

ggtattaggg ataatattca tttagccttc tgagctttct gggcagactt ggtgaccttg 120
ccagctccag cagccttctt gtccactgct ttgatgacac ccaccgcaac tgtctgtctc 180
atatcacgaa cagcaaagcg acccaaaggt ggatagtctg agaagctctc aacacacatg 240
ggcttgccag gaaccatatc aacaatggca gcatcaccag acttcaagaa tttagggcca 300
tcttccagct ttttaccaga acggcgatca atcttttcct tcagctcagc aaacttgcat 360
gcaatgtgag ccgtgtggca atccaataca ggggcatagc cggcgcttat ttggcctgga 420
tggttcagga taatcacctg agcagtgaag ccag 454

<210> 1124
<211> 219
<212> DNA
<213> Homo sapien

<400> 1124
cctgctccag agcacggctg accatttctg ctccgggatc tcagctcccg ttccccaagc 60
acactcctag ctgctccagt ctcagcctgg gcagcttccc cctgcctttt gcacgtttgc 120
atccccagca tttcctgagt tataaggcca caggagtgga tagctgtttt cacctaaagg 180
aaaagcccac ccgaatcttg tagaaatatt caaactaat 219

<210> 1125
<211> 246
<212> DNA
<213> Homo sapien

<400> 1125
ccagagctgg gcccaagctg cgctggaatc gcagcaggag aggggagtgg gctggttctt 60
cccaccactt cccaggctct gacagccgag actcatttcc aaggcacagc agctttctaa 120
agggactgag tttggactgg gttttggacc tccaggggct ggagcttcat cacctggggca 180
gtgtcttttc tcagagagca ggtttcttta tagtttggaa ataaatggtt cacggttcaa 240
aagaaa 246

<210> 1126
<211> 227
<212> DNA
<213> Homo sapien

<400> 1126
ccattgttcc cgtgcatcga agcttgcagg cagcttcagg tcctcggtaa acataactct 60
ctggggtggc ttgggcccac ccaggaaggt accacatagc ctcttcaagt agctcatgtc 120
cacgttgtag aagttgtggc cggcctgcca cgtggtattc cgtttgttga catagttgac 180
cagctcatcc gacaggggat ggaaagaggg cctgctccgg gcattgg 227

<210> 1127
<211> 377
<212> DNA
<213> Homo sapien

<400> 1127
cctgccgtcg atgccaggga ggccgacagg accttctttt ccagcggggc cgatatttcc 60
aggggaacca ggaagacctc tgggtcccat gagaccaggc tccccagggc gaccagcatc 120
tccattaggt cctcggactc cagcagggcc acttgcacca cgactaccag gagggcccat 180
gacgccagct ctgccatcag ctccaggaag accacgagaa ccaggactac ctctcagccc 240
aggaggtcct ggagggccgg cagatccagc ttccccatta gggcctctct ttccttcttc 300
accactggga ccaggaggac cttggggccc agcagagccg ggctcaccct tgttaccgct 360

ctctcctttg gagccag 377

<210> 1128
<211> 253
<212> DNA
<213> Homo sapien

<400> 1128
gagagctatt gctttgttaa gatataaaaa ggggtttctt tttgtctttc tgtaaggtgg 60
acttccagct tttgattgaa agtcctaggg tgattctatt tctgctgtga tttatctgct 120
gaaagctcag ctggggttgt gcaagctagg gacccattcc tgtgtaatac aatgtctgca 180
ccaatgctaa taaagtccta ttctctttta tgagaaagaa aaagacactg tcctttaaag 240
tgctgcagta tgg 253

<210> 1129
<211> 314
<212> DNA
<213> Homo sapien

<400> 1129
ccaagagcta caatgagcag cgcatcagac agaacgtgca ggtgtttgaa ttccagttga 60
cttcagagga gatgaaagcc atagatggcc taaacagaaa tgtgcgatat ttgacccttg 120
atatttttgc tggcccccca attatccatt ttctgatgaa tattaacatg gagggcattg 180
catgaggtct accagaaggc cctgcgtgtg gatggtgaca cagaggatgg ctctatgctg 240
gtgactggac acatcgcctc tggttaaatc tctcctgctt ggtgatttca gcaagctaca 300
gcaaagccca ttgg 314

<210> 1130
<211> 239
<212> DNA
<213> Homo sapien

<400> 1130
ccagtccaac ctgctcctca ttattgtata aatgagcaga atcaatatgg cggaagtcag 60
cttcaattgc caatttggtg gcctctaaag ctttactttt aggaacctct gcaggcgcat 120
aggtgccaaa tcccaggaca ggcatgaagt gaccatcatt cagcttcaca cactgatatt 180
tcgaatccat ttctgtcact agcctggcta gcaaatgttt cttcctccct cacaggcta 239

<210> 1131
<211> 402
<212> DNA
<213> Homo sapien

<400> 1131
aaggagtcct gcttatcaca atgaatgttc tcctgggcag cgttgtgatc tttgccacct 60
tcgtgacttt atgcaatgca tcatgctatt tcatacctaa tgagggagtt ccaggagatt 120
caaccaggaa atgcatggat ctcaaaggaa acaaacaccc aataaactcg gagtggcaga 180
ctgacaactg tgagacatgc acttgctacg aaacagaaat ttcatgttgc acccttgttt 240
ctacacctgt gggttatgac aaagacaact gccaaagaat cttcaagaag gaggactgca 300
agtatatcgt ggtggagaag aaggacccaa aaaagacctg ttctgtcagt gaatggataa 360
tctaatgtgc ttctagtagg cacagggctc ccaggccagg ac 402

<210> 1132
<211> 304

<212> DNA
<213> Homo sapien

<400> 1132
ccaccccgga gatgacacga ggctcacatg actctagaca cttggtggaa agtgaggcga 60
gaaaaacaat gacttgggcc aattacacga ctgcaaagct agagctgcca acagggctcc 120
agggagcttg gcttctgtag aagttctaag gaagcggtac gaactccacg gcggtggggc 180
gctaactagc agggacccct gcaagtgttg gtcgggggcc tcgagctgcc tgagctgaca 240
cgaggggagg ggtctgtgta gccaacaggt gaccgaaggg cttgcctgcc cacagcttac 300
ttgg 304

<210> 1133
<211> 224
<212> DNA
<213> Homo sapien

<400> 1133
ctgacatttt ctatagtaga tatggaggag gtccaagact aactgtgaaa gccctgtgta 60
aggaatgtgt agtagaacgt tgtcgcatat tgcgtctgaa gaaccaacta aatgaagatt 120
ataaaactgt taataatctg ctgaaagcag cagtaaaggg cagcgatgga ttttgggtgg 180
ggaagtcctc cttgcggagt tggcgccagc tagctcttga acag 224

<210> 1134
<211> 250
<212> DNA
<213> Homo sapien

<400> 1134
cctactctgc tgaggtggcg cttcctgcta agggcccttc tctgcccttt ctgccctcct 60
tcccatccca catgctgagc cgccacaaag accaaagaag tgatggcttt tctctgtccc 120
ctgctgctct gaggggagag gggtgggtct cctgagccac tcagatggga aagtccctta 180
ctcggcccct ccctccccag cagccccaag ctttacactg gatgcagcga tcaacccacc 240
actcaccagg 250

<210> 1135
<211> 315
<212> DNA
<213> Homo sapien

<400> 1135
ccaatgggct ttgctgtagc ttgctgaaat caccaagcag gagagattta accagaggcg 60
atgtgtccag tcaccagcat agagccatcc tctgtgtcac catccacacg cagggccttc 120
tggtagacct catgcaatgc cctccatgtt aatattcatc agaaaatgga taattagggg 180
ggccagcaaa aatatcaagg gtcaaatatc gcacatttct gtttaggcca tctatggctt 240
tcatctcctc tgaagtcaac tggaattcaa acacctgcac gttccgtctg atgcgctgct 300
cattgtagct cttgg 315

<210> 1136
<211> 377
<212> DNA
<213> Homo sapien

<400> 1136
cctgccgtcg atgccaggga ggccgacagg accttctttt ccagcggggc cgatatttcc 60

aggggaacca ggaagacctc tgggtcccat gagaccaggc tccccagggc gaccagcatc 120
tccattaggt cctcggactc cagcagggcc acttgcacca cgactaccag gagggcccat 180
gacgccagct ctgccatcag ctccaggaag accacgagaa ccaggactac ctctcagccc 240
aggaggtcct ggagggccgg cagatccagc ttccccatta gggcctctct ttccttcttc 300
accactggga ccaggaggac cttggggccc agcagagccg ggctcaccct tgttaccgct 360
ctctcctttg gagccag 377

<210> 1137
<211> 250
<212> DNA
<213> Homo sapien

<400> 1137
ctgttcaact tccaactcta aataggcacc attaaacaaa aaaccccagt attttaaatt 60
tctccagcac acattccagg atcaatgctc tgaactgtaa tcagctagta attcataacg 120
ggaatacagc cttagaatgg aagctatatt gcttccctgc cccctttctc ttacaattgg 180
agagtgtagg tattaaggga tacaaagtca gaggaagaat aattaaaaag aaaaatgccc 240
aaagctgcag 250

<210> 1138
<211> 511
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(511)
<223> n = A,T,C or G

<400> 1138
tcgaccaggt cctcctgggc catctggtcc ccgaggtcag cctggtgtca tgggcttccc 60
cggtcctaaa ggaaatgatg gtgctcctgg taagaatgga gaacgaggtg gccctggagg 120
acctggccct cagggtcctc ctggaaagaa tggtgaaact ggacctcagg gacccccagg 180
gcctactggg cctggtggtg acaaaggaga cacaggaccc cctggtccac aaggattaca 240
aggcttgcct ggtacaggtg gtcctccagg agaaaatgga aaacctgggg aaccaggtcc 300
aaagggtgat gccggtgcac ctggagctcc aggaggcaag ggtgatgctg gtgcccctgg 360
tgaacgtgga cctcctggat tggcaggggc cccaggactt agaggtggag ctggtccccc 420
tggtcccgaa ngaggaaagg gtgctgctgg tcctcctggg ccacctggtg ctgctggtac 480
tcctggtctg caaggaatgc ctggagaaag a 511

<210> 1139
<211> 505
<212> DNA
<213> Homo sapien

<400> 1139
ctgtggactc cagcatgttt ctgataatta tgcaagcaac aattctgtag cctcaagtaa 60
gaccacctgt gaacttgatc attatctggc ccaaatatga agataaacta taactttgga 120
gtttgtttcc tatttgtatt cacattctgc ttcctaaatc agttttctaa attgtgcctg 180
caattaggca ttggtcaggg gtgaatggct cttttcacag agagtagcca accagagacc 240
tttgctttga tatcatcaac tgcagagaat gctgttgatg ggaatgctgg aagcagaaac 300
tttgtcatcg gaaaaacttt tcttgtatgc atgagactca acatcaggat ccacagctta 360
aagatgggaa ttcaggtatg aaagaaaaca ggcaaggagg cactgaggga gaaagacaca 420
gactttatcg ctctgtggct cattgttact ggaatattct aaaactcttg ttcacatgct 480

attatgactt ataaagcagc aacag 505

<210> 1140
<211> 256
<212> DNA
<213> Homo sapien

<400> 1140
ctgtagcttc tgtgggactt ccactgctcg ggcgtcaggc tcaggtagct gctggccgcg 60
tacttgttgt tgctctgttt ggagggtttg gtggtctcca ctcccgcctt gacggggctg 120
ccatctgcct tccaggccac tgtcacagct cccgggtaga agtcactgat cagacacact 180
agtgtggcct tgttggcttg gagctcctca gaggagggcg ggaacagagt gacagtgggg 240
ttggccttgg gctgac 256

<210> 1141
<211> 371
<212> DNA
<213> Homo sapien

<400> 1141
ccagggcccc attctgtctg tgggactgtg ggttctcagt ggaattgttg cctttcttgt 60
cgtggagaaa tttgtgagac atgtgaaagg aggacatggt cacagtcatg gacatggaca 120
cgctcacagt catgcacgtg gaagtcatgg acatggaaga caagagcgtt ctaccaagga 180
gaagcagagc tcagaggaag aagaaaagga aacaagaggg gttcagaaga ggcgaggagg 240
gagcacagta cccaaagatg ggccagtgag acctcagaac gctgaagaag aaaaaagagg 300
cttagacctg cgtgtgtcgg ggtacctgaa tctggctgct gacttggcac acaacttcac 360
tgatggtctg g 371

<210> 1142
<211> 312
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(312)
<223> n = A,T,C or G

<400> 1142
cctcccacac tgtcaaatgt caactccacc agcactgaga caatgagtag atgagaatgt 60
agaaagaggg aaggtggtag gtaaaggagc ggaaggaaga ggtggggaaa gagggaaggt 120
ggtaggtaaa ggagcggaag gaagaggtgg ggaaagaggg aaggagagaa gggaaggagg 180
gaagagaaag aaggaagaaa aggaaagcat ggcccggcta gagacaaagc cagaggtgat 240
caggtcagca gcaggagagg ctcagaaggg agcctctcgg gaagtgcagg cngccatgag 300
ggctcgtttc ag 312

<210> 1143
<211> 367
<212> DNA
<213> Homo sapien

<400> 1143
ccagacgtgg tggctcacac ctgcaatccc agcaccttag gaggccgagg caggaggatc 60
cttgaggtca ggagttcgag accagcctcg ccaacatggt gaaaccccat ttctactaaa 120

atacaaaaaa ttagccaagt gtggtggcat atgcctgtaa tcccaactac tcagaaggcc 180
gaggcaggag aattacttga acgcaggaga atcactgcag cccaggaggc agaggttgca 240
gtgagccgag attgcaccac tgcactccag cctgggtgac tgagcaagac tccatctcag 300
taaataaata aataaataaa aagcgctgca gtagctgtgg cctcaccctg aagtcagcgg 360
gcccagg 367

<210> 1144
<211> 159
<212> DNA
<213> Homo sapien

<400> 1144
cctggaggag cggccgcaca cacagccagg cgctaggctc cctgcgggac ctcgggaagg 60
gggaagagcg tcaacgattt acggagggtc cagccgctgg gtcagattga gacaaaccat 120
tgtgtggttg ggttcgggtc agcaggctgg agagggttc 159

<210> 1145
<211> 450
<212> DNA
<213> Homo sapien

<400> 1145
ccatgggtgt ctggagcacc ctgaaactgt atcaaagttg tacatatttc caaacatttt 60
taaaatgaaa aggcactctc gtgttctcct cactctgtgc actttgctgt tggtgtgaca 120
aggcatttaa agatgtttct ggcattttct ttttatttgt aaggtggtgg taactatggt 180
tattggctag aaatcctgag ttttcaactg tatatatcta tagtttgtaa aaagaacaaa 240
acaaccgaga caaacccttg atgctccttg ctcggcgttg aggctgtggg gaagatgcct 300
tttgggagag gctgtagctc agggcgtgca ctgtgaggct ggacctgttg actctgcagg 360
gggcatccat ttagcttcag gttgtcttgt ttctgtatat agtgacatag cattctgctg 420
ccatcttagc tgtggacaaa ggggggtcag 450

<210> 1146
<211> 324
<212> DNA
<213> Homo sapien

<400> 1146
ccatacaggg ctgttgccca ggccctagag gtcattcctc gtaccctgat ccagaactgt 60
ggggccagca ccatccgtct acttacctcc cttcgggcca agcacaccca ggagaactgt 120
gagacctggg gtgtaaatgg tgagacgggt actttggtgg acatgaagga actgggcata 180
tgggagccat tggctgtgaa gctgcagact tataagacag cagtggagac ggcagttctg 240
ctactgcgaa ttgatgacat cgtttcaggc cacaaaaaga aaggcgatga ccagagccgg 300
caaggcgggg ctcctgatgc tgga 324

<210> 1147
<211> 191
<212> DNA
<213> Homo sapien

<400> 1147
ccacgaaaat caatgagaag ccacaggtga tcgcggacta tgagagcgga cgggccatac 60
ccaataacca ggtgcttggc aaaatcgagc gggccattgg cctcaagctc cggggaaagg 120
acattggaaa gcccatcgag aaggggccta gggcgaaatg aacacaaagc ctcgaaatca 180
gtgtgctcca g 191

<210> 1148
<211> 344
<212> DNA
<213> Homo sapien

<400> 1148
ctgtccaatg acaacaggac cctcactcta ctcagtgtca caaggaatga tgtaggaccc 60
tatgagtgtg gaatccagaa cgaattaagt gttgaccaca gcgacccagt catcctgaat 120
gtcctctatg gcccagacga ccccaccatt tccccctcat acacctatta ccgtccaggg 180
gtgaacctca gcctctcctg ccatgcagcc tctaacccac ctgcacagta ttcttggctg 240
attgatggga acatccagca acacacacaa gagctcttta tctccaacat cactgagaag 300
aacagcggac tctatacctg ccaggccaat aactcagcca gtgg 344

<210> 1149
<211> 329
<212> DNA
<213> Homo sapien

<400> 1149
ctgacccact cactgggcgg gggcacaggc tctggaatgg gcactctcct tatcagcaag 60
atccgagaag aataccctga tcgcatcatg aataccttca gtgtggtgcc ttcacccaaa 120
gtgtctgaca ccgtggtcga gccctacaat gccacccctct ccgtccatca gttggtagag 180
aatactgatg agacctattg cattgacaac gaggccctct atgatatctg cttccgcact 240
ctgaagctga ccacaccaac ctacggggat ctgaaccacc ttgtctcagc caccatgagt 300
ggtgtcacca cctgcctccg tttccctgg 329

<210> 1150
<211> 406
<212> DNA
<213> Homo sapien

<400> 1150
ccagttattt gcaagtggta agagcctatt taccataaat aatactaaga accaactcaa 60
gtcaaacctt aatgccattg ttattgtgaa ttaggattaa gtagtaattt tcagaattca 120
cattaacttg attttaaaat cagttttgtg agtcatttac cacaagctaa atgtgtacac 180
tatgataaaa acaaccattg tattcctgtt tttctaaaca gtcctaattt ctaacactgt 240
atatatcctt cgacatcaat gaactttgtt ttcttttact ccagtaataa agtaggcaca 300
gatctgtcca caacaaactt gccctctcat gccttgcctc tcaccatgct ctgctccagg 360
tcagcccccct tttggcctgt ttgttttgtc aaaaacctaa tctgct 406

<210> 1151
<211> 346
<212> DNA
<213> Homo sapien

<400> 1151
ctgcgtgagt accaggagct gatgaacgtc aagctggccc tggacatcga gatcgccacc 60
tacaggaagc tgctggaggg cgaggagagc cggctggagt ctgggatgca gaacatgagt 120
attcatacga agaccaccag cggctatgca ggtggtctga gctcggccta tgggggcctc 180
acaagccccg gcctcagcta cagcctgggc tccagctttg gctctggcgc gggctccagc 240
tccttcagcc gcaccagctc ctccagggcc gtggttgtga agaagatcga gacacgtgat 300
gggaagctgg tgtctgagtc ctctgacgtc ctgcccaagt gaacag 346

<210> 1152
<211> 427
<212> DNA
<213> Homo sapien

<400> 1152
ctggactgct gtacatcaag gacagattaa ctggaaaaca tatgttcctt atgcgtgatc 60
gagagccatt cagaaaagac ttcctttgtg ttcagcctat acttttccat atggtatacc 120
ttgaaaaaaa ttagcacacc atggttattt ttctaccttt tataaaagac agagcctgtt 180
tactcattta gaagatagag aaaattggtc taaaattgaa catcctagat tcacactccc 240
aagtcactta aggtgatttg atggtgagga aaatgattga cagagcccaa caatgatctc 300
aggaattaca ttttccaaca gaccaaaaaa tgttttcatg tagcagcaat gcagatttgg 360
tgaatattta atatatattt tagtatgtat ttcactttat gactgacaat taaaaaatat 420
tgtttgg 427

<210> 1153
<211> 331
<212> DNA
<213> Homo sapien

<400> 1153
ctggccggcg gtgcagatct ggagtccagc ctcagggatg cgctactttc cattctctgc 60
attgaacatt cgttctgtca gcatccgctc cagcttcact gcatcagcgg caaacttgcg 120
gatcccgtca gagagcttct ccacagccat ctggtcctcg ttgtgcaacc aacggaaaga 180
cttctcatcc aggtggattt tttccaggtc actggcttgg gctgggggac aagaaccagc 240
cttccatgcc tgctccatgt ccctgcccac cttggcccct tgggctcagg gcctgaaccg 300
ctgcacccaa gcatctccca ccagggccag g 331

<210> 1154
<211> 403
<212> DNA
<213> Homo sapien

<400> 1154
ctgaactttc agatgaagtt gacttctact tgattgcagg attcagggtt tctcagatgt 60
taatacagag tcaaaagcgg tggataaaac cttgcaaatg gcttgtgctt gttccaggct 120
gttgcactga taaacccaca ggctgtattc ctcattgctt gcatctgtgg tcttcagagc 180
cagtaagctt tttcccgccc ccagaccgtc atcgtaacac accatccgga ttattaagta 240
gagagcatgc ctgtgcaaaa catcatattg atctgatgtt gatactttta tgccatactt 300
ggaaactccc ataataaatt cttcctccgg aggaacaaaa ggcaactttc catcttgctg 360
ggcaacgtct atataattta tcaggtctaa tggcccttca agg 403

<210> 1155
<211> 491
<212> DNA
<213> Homo sapien

<400> 1155
cctccctctc agagcttgcc ccagggactc tctggccctc agggttcaat gtattctgac 60
caaggccaag ctttcctggg gctcagggaa aatcacactt tgctacccga agctgtatcc 120
cctcagatgc caggaaggcc gtgatcatct gactccaccc tcctgagaca cattctctcc 180
ctgactgtcc tgttctaagt cagcggagca ccttaggatg gaggggtgga ggcgaggcca 240
gatgcagcct ctgtgaacag gtgcctggag gctgggaaat gaccctgaga gggcaggaca 300
cagcaaccgt gggcttaagg tgaccttgag agcaagcttg gcccacttta caattctgtt 360

cagagccagc ccctaacatg gtggtcattt attcatttgt tccctcattt taaaaaatgt 420
aaggccaggc atggtggctc acgccgggta atcccagcac tttgggaggc cgaggcaggc 480
agatcacctg a 491

<210> 1156
<211> 586
<212> DNA
<213> Homo sapien

<400> 1156
agcaaataga agcaatcagg gcactgcaag ttgtgactac tccaagatgt gaatcatgga 60
tcatgcaaat tacaatcatg ttttaacctg acctccaaag ggagaataaa gtaaaaatta 120
tcccatgtga ggattattca ccagtttata tgtcattagt taccagtttt tctttatgaa 180
taatgtttag caatattata aagtatatct aatagttatc aggtttttgg cttgttactt 240
tttggtagta acttataaaa ctgactggaa aagaccaata aggcactgtt tgcatgttac 300
aaattatatc caaagaccaa aagctgttaa taagaaatct tccaataaaa ccacatcata 360
ttttcttttt tatttacacc cacatcagga ttacaacttt atcaggactg caccttgatc 420
aggaagggat gtttctctta caaggctaat aagaaaggaa caataaattt gctgatgaaa 480
aaagtcatgc atttaaaaat tttaacttta atttttaatt gagggcaata ttttaaagaa 540
atgctcatta gtcattcctt taaattgtgt gtgtgagaga gagaaa 586

<210> 1157
<211> 392
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

<400> 1157
cctccggctg gtgttctgag ggttgccagg ccatcgtgga cacaggcacc tctctgctca 60
ctgtgcccca gcagtacatg agtgctcttc tgcaggccac aggggcccag gaggatgagt 120
atggacagtt tctcgtgaac tgtaacagca ttcagaatct gcccagcttg accttcatca 180
tcaatggtgt ggagttccct ctgccacctt cctcctatat cctcagtaac aacggctact 240
gcaccgtggg agtcgagccc acctacctgt cctcccagaa cggccagccc ctgtggatcc 300
tcggggatgt cttcctcagg tcctactatt ccgtctacga cttgggcaac aacagagtag 360
gctttgccac tgncgcctag acttgctgnc tc 392

<210> 1158
<211> 375
<212> DNA
<213> Homo sapien

<400> 1158
gggaaaaata attttattcc tcaaatgatc agcacattca gaagcaggac agaggagctc 60
tgatgacatc tctgggggac tcaaagcggc cctcattttc tggtattttc ccaggtgatt 120
ctcttccaac ctgtgagtcc tgctctcttt cctcccatct gaagtttgag acatcctctg 180
ccacaaggaa agccaccaat accagcccaa agagccacca gagaggaacc aaaccacatg 240
catcaagtta taggaaggat gcaagaaggg aaattaggaa ggaaagggag gagtttagtt 300
ggcattctgg ggcatgctaa catgagggcg atggtctctc tccaagtcgc tggacatatc 360
ccttttcttt ccagg 375

<210> 1159
<211> 361
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(361)
<223> n = A,T,C or G

<400> 1159
gtttattgta aaaaacaaaa aactctgtat tgtgcacatg aagacctgga gatgtgccga 60
cttcctgtcc ccaaagccaa tcttccccgc caaggcgact gaggatttca agggctcaga 120
gttactgcag gaatccaggt gacaccagga agagaagggg gaggagggga atcggagggg 180
atgggtttaa aaggcagagg ggagggagat ggaagggaat gaggaggagg gagactgagg 240
gggctgcctt tccttgggga ctggggaact catgccctgc ccccacccgc agggctccag 300
gggtgagaga aaggggtgga gaataaagaa ttgggcanca gggtgatggg gggaacagca 360
g 361

<210> 1160
<211> 142
<212> DNA
<213> Homo sapien

<400> 1160
cgcaatgttg ccagtgtctg tctgcaggtt ggctacccaa ctgttgcatc agtaccccat 60
tctatcatca acgggtacaa acgagtcctg gccttgtctg tggagacgga ttacaccttc 120
ccacttgctg aaaaggtcaa gg 142

<210> 1161
<211> 193
<212> DNA
<213> Homo sapien

<400> 1161
ccaaagccta cgaccacctc ttcaagttgc tgctgatcgg ggactcgggg gtgggcaaga 60
cttgtctgat cattcgcttt gcagaggaca acttcaacaa cacttacatc tccaccatcg 120
gaattgattt caagatccgc actgtggata tagaggggaa gaagatcaaa ctacaagtct 180
gggacacggc tgg 193

<210> 1162
<211> 265
<212> DNA
<213> Homo sapien

<400> 1162
cctgggtgcc acgattccca gcctggagcg cagccaggac gtgggagacc ttctcagaga 60
ctctccgggc acactctatg agctccttct tggtgtaggc atcactgggg ctgcactgca 120
gggcgcctgc cttggtgacc agagcggcac agccatggcc cagctcctgt acccggtgtt 180
tgatatggga acctatctct tcattttcag cagccaccgc tgcaggcttg gcctccgagg 240
ccagacggcc atagtcactg gtcag 265

<210> 1163
<211> 337

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(337)
<223> n = A,T,C or G

<400> 1163
ctgcagagtg ggganaggct tttgccacta gaaacttcca ggatgcacga gatcaaggaa 60
ttaagtctgt aacaaaataa caggatgctc tgtgaagtcc aaagaattgc ttgaggcaaa 120
ctgcagagct ccatgagatc agcaacccca agagctttta caccgccgga cacggtttaa 180
taggaaaaaa atctcctata ctgnntattc anaaccaaat gaanagaaat gtcaaaggag 240
tcggaaacaa tatgtcaaat tangtaaatt cctgacctga cccanatttt gcngaacatt 300
tgatcctaaa ctgtgctgtc cacgtcctta ggatcac 337

<210> 1164
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 1164
ccagacgtgg tggctcacac ctgcaatccc agcaccttag gaggccgagg caggaggatc 60
cttgaggtca ggagttcgag accagcctcg ccaacatggt gaaaccccat ttctactaaa 120
aatacaaaaa attagccaag tgtggtggca tatgcctgta atcccaacta ctcagaaggc 180
cgaggcagga gaattacttg aacgcaggag aatcactgca ncccangagg canaggttgc 240
antgagccga gattgcacca ctgcactcca gcctgggtga cagagcaaga ctccatctca 300
gtaaataaat aaataaataa aaagcgctgc agtagctgtg gcctcaccct gaagtcagcg 360
ggcccagg 368

<210> 1165
<211> 267
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(267)
<223> n = A,T,C or G

<400> 1165
ctgggaagga ggctcctccg ccttctcctg tttgtcatcc tcctcatcag actcgacctc 60
catctcaact tcctcactct ccccaaactt ttcatagcgc tcctgaatga ggattcgggc 120
ccccagctcc tctggcgtgg tggggggagg gaagttccct tgctcattgg gttggaagnc 180
cactgtttcc accaccacaa aatcatgcca ntcnatctga gcataggcca cccgntcctt 240
ctccttctcc nnttcttcct tcttcct 267

<210> 1166
<211> 433

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(433)
<223> n = A,T,C or G

<400> 1166
ctgtctgtac actttttctt gggggaagag ttcttgtctt cagtttactg cagtagggtt 60
cctggctctg ttacatgctc atgtgttccg gaagaacaca tgaaatatca tcccacggat 120
gacgatacag cccctgcttc ancctcttct gatcaagata gtgtccaatg aaccccatac 180
tccttcccag cacaaagatg ccattgaggg ctccaatgtc aatatattca tcagcttcct 240
ccctgcaaca cacatcaact tgtagtttta aaaggctcac gtgactgccc tcctccccac 300
agacagtact actactgccc aanaatgaga agaaaagggg tgctctgggt ggtngcatta 360
caggcaattt ttgttntctt nnttatacct ctccttattt tncaaatntt ctattatgag 420
tntgcattac ttt 433

<210> 1167
<211> 362
<212> DNA
<213> Homo sapien

<400> 1167
cctctggctc tttcttcagc cacttctcca gctcctgcag gttctggtct gagtagtcag 60
tgacgacgat ctccttaaag gattcacaag cagagaggag ctgatagata gtggggccag 120
agccgatgtc aatcagcagg tctcccttca caccgtctag gcagaatatc ttgaaaagat 180
ttttcagaag gtgcttaaga atctggcttt ctgcagagtg cctagaacca aacttgtaat 240
atttttctag gtaatcccga gggttaaaat ggcttagata ggtgtccttg gaggtgaagc 300
ctgattccat tatgtctcac ttccgtacca ctggagcact gccctccttc tctttcctcc 360
ag 362

<210> 1168
<211> 459
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(459)
<223> n = A,T,C or G

<400> 1168
gcagtcatgg ggcccaggac catgccactg gccctgctcc cccagccgca gcctcacctg 60
caggtgctcc tcgatgtcct tgcggtcgta ggtgatgcca ctgggcgtga tgcacggctc 120
ccgcatcagc tcaaagctga tcttgccaca caggtagtcg gggatgtctc gcttctgtgg 180
cacaggggca cacggtcaga ggctgaaaag gggcactgca cgagcacctg ccagccatcg 240
gcagcaagcg acacacactc accttcctct tctcatccac ctgagaaaaa agctcgtcca 300
tgtccgccat gtacttgtcc tgtgaagagt tgagtgctgt gcttggggga gacaccccac 360
ctccctcctn catggggcac anacccaaca caaggcgggg atgctnccac gccacgtgca 420
cacacacaga cccacatgtg ggtgggggc accctcacg 459

<210> 1169
<211> 386

<212> DNA
<213> Homo sapien

<400> 1169
ccaggccacc tgtgcggggc tcctcgatgt ggaaggttcg ggtgaggaga ttgtagaagg 60
agccgtagca cacggccacc acagtgcacg tgaggcagat cacgctgtag ggcatgctga 120
agtccggtgt cggcaggttc accagcagcg gctccgtgta gagccgcaca aagtagttag 180
agccatcaga gactgggaac aggctgttga agaggggact ctcttcccag tccactggct 240
tggctgctac catgctgggc acaagggcgc tgaggacaga tgggctgaca tagaagccat 300
ggttaggatc tggcgtgtac tcggtccact tcagcagcgc ccgctcaaac tggatggaaa 360
ccttggtgac tgagttggcc ggccag 386

<210> 1170
<211> 480
<212> DNA
<213> Homo sapien

<400> 1170
ctatttctct gttagtgttt aaccaaccat ctgttctaaa agaagggctg aactgatgga 60
aggaatgctg ttagcctgag actcaggaag acaacttctg cagggtcact ccctggcttc 120
tggaggaaag agaaggaggg cagtgctcca gtggtacaga agtgagacat aatggaatca 180
ggcttcacct ccaaggacac ctatctaagc cattttaacc ctcgggatta cctagaaaaa 240
tattacaagt ttggttctag gcactctgca gaaagccaga ttcttaagca ccttctgaaa 300
aatcttttca agatattctg cctagacggt gtgaagggag acctgctgat tgacatcggc 360
tctggcccca ctatctatca gctcctctct gcttgtgaat cctttaagga gatcgtcgtc 420
actgactact caggaccaga acctgcagga gctggagaag tggctgaaga aagagccaga 480

<210> 1171
<211> 317
<212> DNA
<213> Homo sapien

<400> 1171
cctcagcagc cctgccacgg atctgcccga ttctttcgca tcaagaagtt gatcttgcga 60
gccatttcca tgttgtagat ccgccggcac ctttcatagc tttccctctg tcgccggcgg 120
catggcttct cataataccg ccgatgctta atgtcctcaa tgagcccatc catagtgagg 180
attctgttta gggtcctgta tgcgctttcc acgttccctt cctgtaccat cacagtcctg 240
gcgatgaact tcagatgttt tgccatgacc ttggatttaa accttcactc tgtagagcct 300
cgcgcgctca gtaccta 317

<210> 1172
<211> 202
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(202)
<223> n = A,T,C or G

<400> 1172
ggcaacggga ggaacagcag cagaggcagc angagcagga ggagcgtgaa cgagaagagc 60
ancggcgatn ngctgcnctc agtgaccgan agaagagagc tctggctgca nagcgccgac 120
tcgctgccca gttgggagcc cctacctctc caatccctga ctctgcaatc gtcaatactc 180

gacgctgctg gagttgtggg gc 202

<210> 1173
<211> 173
<212> DNA
<213> Homo sapien

<400> 1173
ctgcctgggt tgtggccgcc ctagcatcct gtatgcccac agctactgga atccccgctg 60
ctgctccagg ccaagcttct ggttgattaa tgagggcatg ggtggtcccc tcaagacctt 120
cccctacctt ttgtggaacc agtgatgcct caaagacagt gtcccctcca cag 173

<210> 1174
<211> 301
<212> DNA
<213> Homo sapien

<400> 1174
ccaagagcta caatgggcag cgcatcagac agaacgtgca ggtttttgag ttccagttga 60
ctgcggagga catgaaagcc atagatggcc tagacagaaa tctccactat tttaacagtg 120
atagttttgc tagccaccct aattatccat attcagatga atattaacat ggagagcttt 180
gcctgatgtc taccagaagc cctgtgtgtg gatggtgacg cagaggacgt ctctatgccg 240
gtgactggac atatcacctc tacttaaatc cgtcctgttt agcgacttca gtcaactaca 300
g 301

<210> 1175
<211> 537
<212> DNA
<213> Homo sapien

<400> 1175
cctgcagggc tcggccgtag gagaaggtca gggcccaggg cttcagcagg gggcacttgt 60
taatggcatt gaggttgatg gacgcctcct cctcactctg gcctccagac aggaaggtga 120
tcccagtgac agcgggggc actgtgcggc gcagcgctgt gacggtcgcc atggcaatct 180
cctcatgaga aaacttctga gtgcaagcat ggcctggggt gaccatgttg ggcttcagca 240
aggtgccttc caggtagatg tggtggtcac tcagagcctt gtagacagca gccagcacct 300
tctcggtcac atactggcag cgcttcaagt catggtcccc atcagggagg atctcaggct 360
ccacgatggg cacaatgcca ttctgctggc agatactggc ataacgggcc agaacattgg 420
cattttccat gatggcgagg gctgaggggg tgtgttcccc aatcttcagc acacaacgcc 480
acttggcgaa gtcagctccg tccttcttgt actgggcaca gcgctcagac agcccat 537

<210> 1176
<211> 384
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(384)
<223> n = A,T,C or G

<400> 1176
ctgacaaaaa atgtgaaatt tccacaaaat atccaactta tgtgactaaa cgcagtagtt 60
tttttaaaag gggagataga aaataaatgg ttttgttgga gtgcatttta gtaagccttt 120

gcagtaaaat gacggttgta actactaaac caaatttagt tttcacagca tggttttgtt 180
gttttcccct tgtttttcag aggtaaattt tgcattatat ccttcagtat tttaacacta 240
ttttggcagt ttacacatta ctttttgntt ttccttcctt tttgngaaat gtattaagtt 300
gtggttctta ttgaaacagt attatataat gttngcttaa ttatatcatg tgatgctcan 360
ntctattntg atttattcat tagt 384

<210> 1177
<211> 562
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(562)
<223> n = A,T,C or G

<400> 1177
ccaacaacat gcaggaagct cagagtatcg atgaaatcta caaatacgac aagaaacagc 60
agcaagaaat cctggcggcg aagccctggg ctaaggatca ccattacttt aagtactgca 120
aaatctcagc attggctctg ctgaagatgg tgatgcatgc cagatcggga ggcaacttgg 180
aagtgatggg tctgatgcta ggaaaggtgg atggtgaaac catgatcatt atggacagtt 240
ttgctttgcc tgtggagggc actgaaaccc gagtaaatgc tcaggctgct gcatatgaat 300
acatggctgc atacatagaa aatgcaaaac aggttggccg ccttgaaaat gcaatcgggt 360
ggtatcatag ccaccctggc tatggctgct ggctttctgg gattgatgtt agtactcaga 420
tgctcaatca gcagttccag gaaccatttg tagcagtggt gattgatcca acaagaacaa 480
tatccgcagg gnaaagtgaa tcttggcgcc tttaggacat acccaaaggg ctacaaacct 540
nctgatgaan gaccttctga gt 562

<210> 1178
<211> 353
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(353)
<223> n = A,T,C or G

<400> 1178
cgcgtctgga tggccgaatc attcgcacag actgggacgc aggctttaag gagggcaggc 60
aatacggccg tgggcgatct gggggccagg ttcgggatga gtatcggcag gactacnatg 120
ctgggagagg aggctatgga aaactggcac agaaccagtg agtggtgaga gctctgtcag 180
tgacaaacac tcctttggcc tgttgaattt gctgaagaac atcacctaaa gtctgcacac 240
gagcccattt ttaccaagat ttgatcagtg tctttactga gctggaagcc tctgaaagtt 300
attaaaggac agaatccaaa agaatgcctt taattcttgt ctgagaatct tgg 353

<210> 1179
<211> 288
<212> DNA
<213> Homo sapien

<400> 1179
ccaatgggat cctcaaggtg cctgccatca atgtcaatga ctccgtcacc aagagcaagt 60
ttgacaacct ctatggctgc cgggagtccc tcatagatgg catcaagcgg gccacagatg 120

tgatgattgc cggcaaggta gcggtggtag caggctatgg tgatgtgggc aagggctgtg 180
cccaggccct gcggggtttc ggagcccgcg tcatcatcac cgaggttgac cccatcaacg 240
cactgcaggc tgccatggag ggctatgagg tgaccaccat ggatgagg 288

<210> 1180
<211> 523
<212> DNA
<213> Homo sapien

<400> 1180
ctggagagat ggagcggtgg gcaccgtcat ccttcctcat cagccacata gaaggacagt 60
ggcgatttca gcccagcttt tctgactgct tgtaaattga agcccagaac tggtttgcca 120
cctgtgggat cgactcagca ttttaaaata ggaggcagtc gtgagtgcag gtttcttgca 180
gctccgggtg gccctgggct ccaggtcagg agacctcagc tcctgtccct gatctgtggt 240
tgtcaagcct tgcagactct aaactcagca tctttatctg tcagacgtag acacgtggct 300
cccgtggttg gtgcggttgg aatagctgag gtaatacacg gacctccaag cactagagca 360
gtatgaggag ttctgaggaa tggttatcct gcggtgcctg tggtccacag caagccattc 420
ttatcccatc cggtttactt cccacagcca ctttgtaagc ataggcatta tcctctaccc 480
catcatagaa atgaggaaaa gaatcaccaa gagagtaagc agc 523

<210> 1181
<211> 493
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(493)
<223> n = A,T,C or G

<400> 1181
cacagatgaa ggctttgtga tacctgatga agggggccca caggaggagc aagaagagta 60
ttaacagcct ggaccagcag agtaacatcg gaattcttca ctccaaatca tgtgcttaac 120
tgtaaaatac tcccttttgt tatccttaga ggactcactg gtttcttttc ataagcaaaa 180
agtacctctt cttaaagtgc actttgcgga cgtttcactc cttttccaat aagtttgagt 240
taggagcttt taccttgtag cagagcagta ttaacaccta gttggttcac ctggaaaaca 300
gagaggctga ccgtggggct caccatgcgg atgcgggtca cactgaatgc tggagagatg 360
ttatgtaata tgctgaggtg gcgacctcag tggagaaatg taaagactga attgaatttt 420
aagctaatgt gaaatcanag aatgttgtaa taagtaaatg ccttaagagt atttaaaana 480
tgcttccaca ttt 493

<210> 1182
<211> 329
<212> DNA
<213> Homo sapien

<400> 1182
cgcgtctctg acactgtgat catgataggg gttcaaacag aaagtgcctg ggccctcctt 60
ctaagtcttg ttaccaaaaa aaggaaaaag aaaagatctt ctcagttaca aattctggga 120
agggagacta tacctggctc ttgccctaag tgagaggtct tccctcccgc accaaaaaat 180
agaaaggctt tctatttcac tggcccaggt agggggaagg agagtaactt tgagtctgtg 240
ggcctcattt cccaggtgcc ttcaatgctc atcaaaacca ggcatgggga aggccctggc 300
aaactgctcc acccgttgcc tgaggttgg 329

<210> 1183
<211> 198
<212> DNA
<213> Homo sapien

<400> 1183
cctgacagac agaagggctt ggagattttt tttctttaca attcagtctt cagcaacttg 60
agagctttct tcatgttgtc aagcaacaga gctgtatctg caggttcgta agcatagaga 120
cgatttgaat atcttccagt gatatcggct ctaactgtca gagatgggtc aacaaacata 180
atcctgggga catactgg 198

<210> 1184
<211> 224
<212> DNA
<213> Homo sapien

<400> 1184
ctggaggtgc ctcagaaggt gcattctgct tcctgcaggg gcttgaaaca ccaaggcact 60
ccagggatcc tggagtcaaa gcagcagccc cggttgttgc actccttggg ggtgacatgg 120
gggtagccgc agtccaccct gtccttggct ggcacggcac actggtttgc agacaggccc 180
acgtactcct cagcagagct ggaggacagc aaggccagga ccag 224

<210> 1185
<211> 367
<212> DNA
<213> Homo sapien

<400> 1185
ccttttacag atgtcagctt tcactggcct ccatgcacaa cctcccacta ccacccaatc 60
tgcctgccac agcaaagtgc aggcaccctg ggccccctgg aggatgcggg caggggctac 120
agggcatcca ggatgtggtc gatcttggtg accagctcct ggcgctttcc tgagatgagc 180
ttctcattct caatgtacgt gtctttcttg agcttgccag ccaccaggcg ctcagcctcc 240
accgccgact tcagcaccag ctccttgacc tgtgcatcca gcttctgcat ttcgctcact 300
ctgtcgcaca gatcagagcc ctctgtcttc agcctggact gcagcagtgc aatctcactg 360
gtcaagg 367

<210> 1186
<211> 188
<212> DNA
<213> Homo sapien

<400> 1186
ccattaagcg gatgctggag atgggagcta tcaagaacct cacgtccttc cgacctgggc 60
aagagctgta gcctgtcggt tgcctactct gctgtctggg tgacccccat gcgtggctgt 120
gggggtggct ggtgccagta tgacccactt ggactcaccc cctcttgggg agggagtcct 180
gggcctgg 188

<210> 1187
<211> 379
<212> DNA
<213> Homo sapien

<400> 1187
gttgatgcta ctctgaagtc tctcaacaac cagattgaga cccttcttac tcctgaaggc 60

tctagaaaga gcccagctcg cacatgccgt gacttgagac tcagccaccc agagtggagc 120
agtggttact actggattga ccctaaccaa ggatgcacta tggatgctat caaagtatac 180
tgtgatttct ctactggcga aacctgtatc cgggcccaac ctgaaaacat cccagccaag 240
aactggtata ggagctccaa ggacaagaaa cacgtctggc taggagaaac tatcaatgct 300
ggcagccagt ttgaatataa tgtagaagga gtgacttcca aggaaatggc tacccaactt 360
gccttcatgc gcctgctgg 379

<210> 1188
<211> 384
<212> DNA
<213> Homo sapien

<400> 1188
cgcgtcggac tgcagccagt ccgtttcctt tctttagcca gccatcctgg tactgtagtt 60
taggggttga tggtggttga aattgatttc tggctggtta ctaaggtgcc tgctagccat 120
tgtataaaat taaaacatga agaatatttt tttttgagc atggctagtg gatttaaaac 180
aacacatacc tgtcactgct ggagtcaaac ttataaaaag ccttaagtgg aaagtgttcc 240
agacggagac tctgagttaa tagaggagta gaagctggtg ttaaagttcc cacgacgcac 300
atggctttgc cagaaactct gtttaatgat cggcctttca cctcttcact tatccttagt 360
cccagtagcc aggatacctg atgg 384

<210> 1189
<211> 419
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(419)
<223> n = A,T,C or G

<400> 1189
ggaaaaacca gccactgctt tacaggacag gggttgaag ctgagccccg cctcacaccc 60
acccccatgc actcaaagat tggattttac agctacttgc aattcaaaat tcagaagaat 120
aaaaaatggg aacatacaga actctaaaag atagacatca gaaattgttg agttaagctt 180
tttcaaaaaa tcagcaattc cccagcgtag tcaagggtgg acactgcacg ctctggcatg 240
atgggatggc gaccgggcaa gctttcttcc tcgagatgct ctgctgcttg agagctattg 300
ctttgttaag atataaaaag ggtttctttt ttgtctttct gtaaggtnna cttccagctt 360
ttgattgaaa gtcctagggt gattctattt ctgctgtgat ttatctgctg aaagctcag 419

<210> 1190
<211> 173
<212> DNA
<213> Homo sapien

<400> 1190
ccaggtactg gcacatcatg ctctggatgg gggtggtggt gtcctgtagg cagagaaaca 60
ggaaattgtc gtagtcagta tcgagcagcg tggcctcgtt cgccaccgta tagttgatct 120
tgaacttctt tggattctca gtcttctctc caaggacctt cttctcaaca cag 173

<210> 1191
<211> 341
<212> DNA
<213> Homo sapien

<400> 1191
cctcctgcca gcagttcttg aagcttcttt ttcattcctg ctactctacc tgtatttctc 60
agttgcagca ctgagtggtc aaaatacatt tctgggccac ctcagggaac ccatgcatct 120
gcctggcatt taggcagcag agcccctgac cgtcccccac agggctctgc ctcacgtcct 180
catctcattt ggctgtgtaa agaaatggga aaagggaaaa ggagagagca attgaggcag 240
ttgaccatat tcagttttat ttatttattt ttaatttgtt cttttctcca agtccaccag 300
tctctgaaat tagaacagta ggcggtatga gataatcagg a 341

<210> 1192
<211> 324
<212> DNA
<213> Homo sapien

<400> 1192
ttggaggttg gcggcgcggg gctgaaggct agcaaaccga gcgatcatgt cgcacaaaca 60
aatttactat tcggacaaat acgacgacga ggagtttgag tatcgacatg tcatgctgcc 120
caaggacata gccaagctgg tccctaaaac ccatctgatg tctgaatctg aatggaggaa 180
tcttggcgtt cagcagagtc agggatgggt ccattatatg atccatgaac cagaacctca 240
catcttgctg ttccggcgcc cactacccaa gaaaccaaag aaatgaagct ggcaagctac 300
ttttcagcct caagctttac acag 324

<210> 1193
<211> 521
<212> DNA
<213> Homo sapien

<400> 1193
ctgctttgtt ttctgttggc agtggaggga caaggtgaga ggagccaggg gtagtcatga 60
acaccagtgg gttctgccct gggcagctcc ccaccttctt taagagagta ctgtgtctca 120
gctccagcag tctcaactgg gaagacccag gactcctgct cttttctcta atccctggga 180
gacgaggtcc agctaaggta gagtaagcag tcagtgacca ggcaggctgg tttgggaggt 240
cactgcctgg aggacgggat cttgtattct tcggaagatg gctgggaaat tcttccctcc 300
attacgtaga actttcttcc cctcctcagt tgaggtgcct agatgtccca caacggggtc 360
ttcactcagg tcctccagag gcacacgctc aaacagtggg tgctcttcga aatgagtgca 420
catccagtcg tgtagctcca gcacatcggt tatggtatac accagcccct gcataggcaa 480
aatcacccta gacaggaggc tgcatgcaac gtcagcagcc a 521

<210> 1194
<211> 208
<212> DNA
<213> Homo sapien

<400> 1194
ccagtgacta gaaggcgagg cgccgcggga ccatggcggc ggcggcggac gagcggagtc 60
cagaggacgg agaagacgag ggagaggagg agcagttggt tctggtggaa ttatcaggaa 120
ttattgattc agacttcctc tcaaaatgtg aaaataaatg caaggttttg ggcattgaca 180
ctgagaggcc cattctgcaa gtggacag 208

<210> 1195
<211> 499
<212> DNA
<213> Homo sapien

<400> 1195
ccagaaagga aagacaataa ttttgttttt tcatttgaa aaaattaaat gctctctcct 60
aaagattctt cacctacttt ggtctccata acttctatgt tttctttcct tctgacacac 120
tagtgcccct aaattgtgat ttgcctatac gtttagggcc ggggttggaa gatgttaaca 180
accatttaag attcatttct gcagtgggag tgggtggagt ttcaccctct gggaaagggg 240
caggtgacag gtatttatca gtcagtgcct ctctagctct tgtaggaaga agcacacgca 300
ggatggagtc tagaggatga gcgatattga ctagcaattc atgggctccc tccagcagtg 360
cgagggtcag agtttctgga gccttgggag gaggcatccc tgtgaggggg ggttagggag 420
atgggagggc accaggaaaa gtgattagaa gtcaggtatg ggaaggctaa attaggacag 480
agtcgagtac atctctgct 499

<210> 1196
<211> 455
<212> DNA
<213> Homo sapien

<400> 1196
ctgacccccc tttgtccaca gctaagatgg cagcagaatg ctatgtcact atatacagaa 60
acaagacaac ctgaagctaa atggatgccc cctgcagagt caacaggtcc agcctcacag 120
tgcacgccct gagctacagc ctctcccaaa aggcatcttc cccacagcct caacgccgag 180
caaggagcat caagggtttg tctcggttgt tttgttcttt ttacaaacta tagatatata 240
cagttgaaaa ctcaggattt ctagccaata accatagtta ccaccacctt acaaataaaa 300
agaaaatgcc agaaacatct ttaaatgcct tgtcacacca acagcaaagt gcacagagtg 360
aggagaacac gagagtgcct tttcatttta aaaatgtttg gaaatatgta caacttcgat 420
acagtttcag ggtgctccag acacccatgg acctg 455

<210> 1197
<211> 444
<212> DNA
<213> Homo sapien

<400> 1197
cctggatgtg gctcttcgca ctgaaggcca agtagtagat cacaaggccg atcgccgcag 60
ccagcacctc agtggacacc cagggcccgt tccaagtgcc ccgatggtcc acgctgactg 120
taaacagagg cgggatgatg gaaatgtcct cgttattcct ctgagccttc ctgaggaggc 180
tgtaggactc ctcgtcgaag aatctaacct cataggtgcc tgcgtgggcg ctcttgtggt 240
tcaggcttca ggacacctga taacgcccca catcctggcc tcgagtgaca gggaattgtt 300
ttccaccgac gtcagcatag agagccatgt tctggaccct gttcttgcat gtcagggaga 360
tctccacaat gaagacggtc tcagtggaaa tgacagcgtc agaagtggtg tagtaggaag 420
gggtgatctg ggctccaggg cagg 444

<210> 1198
<211> 450
<212> DNA
<213> Homo sapien

<400> 1198
ccatgggtgt ctggagcacc ctgaaactgt atcaaagttg tacatatttc caaacatttt 60
taaaatgaaa aggcactctc gtgttctcct cactctgtgc actttgctgt tggtgtgaca 120
aggcatttaa agatgtttct ggcattttct ttttatttgt aaggtggtgg taactatggt 180
tattggctag aaatcctgag ttttcaactg tatatatcta tagtttgtaa aaagaacaaa 240
acaaccgaga caaacccttg atgctccttg ctcggcgttg aggctgtggg gaagatgcct 300
tttgggagag gctgtagctc agggcgtgca ctgtgaggct ggacctgttg actccgcagg 360
gggcatccat ttagcttcag gttgtcttgt ttctgtatat agtgacatag cattctgctg 420

ccatcttagc tgtggacaaa gggggtcag 450

<210> 1199
<211> 294
<212> DNA
<213> Homo sapien

<400> 1199
agtcacagtt gcacctattc aaaactagct ttaaagtgag ctatttttaa acttcataaa 60
aatattcatg attttattag tttgaatatt tctacaagat tcgggtgggc ttttccttta 120
ggtgaaaaca gctatccact cctgtggcct tataactcag gaaatgctgg ggatgcaaac 180
gtgcaaaagg caggggggaag ctgcccaggc tgagactgga gcagctagga gtgtgcttgg 240
ggaacgggag ctgagatccc ggagcagaaa tggtcagccg tgctctggag cagg 294

<210> 1200
<211> 258
<212> DNA
<213> Homo sapien

<400> 1200
agctacctaa gaacagctaa aagagcacac ccgtctatgt agcaaaatag tgggaagatt 60
tataggtaga ggcgacaaac ctaccgagcc tggtgatagc tggttgtcca agatagaatc 120
ttagttcaac tttaaatttg cccacagaac cctctaaatc cccttgtaaa tttaactgtt 180
agtccaaaga ggaacagctc tttggacact aggaaaaaac cttgtagaga gagtaaaaaa 240
tttaacaccc atagtagg 258

<210> 1201
<211> 403
<212> DNA
<213> Homo sapien

<400> 1201
ctgagctgct gtctgctttg gaaaaccgtt cctgccgctg ccgatggatg gaaatgcaat 60
ggatttcagc ttcttatcat cagccagggc caagcagttt ttcactgtct tttccagaag 120
ttcttcacac ttgtctgcac cccaaactgg actattacag tggatcacaa acttggcagg 180
caggccatgg cctgcgctga cagcagctcc agctacttcc aagggcccgt tctttttccg 240
gagttccagg acagcttcca caaactcctt gccacctttc ttctccagcg tgtttcctag 300
gtcatcttta aggtcaatgt cagcattggt aggattgatt atggcctcca cctcaaagcc 360
ggctaaatta ctgatttcac tgtgaataag gttcggcttc tgg 403

<210> 1202
<211> 325
<212> DNA
<213> Homo sapien

<400> 1202
ctgaacctgc gggagtcggc caccatcacg tgcctggtga cgggcttctc tcccgcggac 60
gtcttcgtgc agtggatgca gagggggcag cccttgtccc cggagaagta tgtgaccagc 120
gccccaatgc ctgagcccca ggccccaggc cggtacttcg cccacagcat cctgaccgtg 180
tccgaagagg aatggaacac gggggagacc tacacctgcg tggtggccct tgaggccctg 240
cccaacaggg tcaccgagag gaccgtggac aagtccaccg gtaaacccac cctgtacaac 300
gtgtccctgg tcatgtccga cacag 325

<210> 1203

<211> 518
<212> DNA
<213> Homo sapien

<400> 1203
ctcaaccaca gtctgacacc agagcccact tccatcctct ctggtgtgag gcacagcgag 60
ggcagcatct ggaggagctc tgcagcctcc acacctacca cgacctccca gggctgggct 120
caggaaaaac cagccactgc tttacaggac aggggttga agctgagccc cgcctcacac 180
ccaccccat gcactcaaag attggatttt acagctactt gcaattcaaa attcagaaga 240
ataaaaaatg ggaacataca gaactctaaa agatagacat cagaaattgt taagttaagc 300
tttttcaaaa aaccagcaat tccccagcgt agtcaagggt ggacactgca cgctctggca 360
tgatgggatg gcgaccgggc aagctttctt cctcgagatg ctctgctgct tgagagctat 420
tgctttgtta agatataaaa aggggtttct ttttgtcttt ctgtaaggtg gacttccagc 480
ttttgattga aagtcctagg gtgattctat ttctgctg 518

<210> 1204
<211> 352
<212> DNA
<213> Homo sapien

<400> 1204
ggggaaagga ggtctcactg agcaccgtcc cagcatccgg acaccacagc ggcccttcgc 60
tccacgcaga aaaccacact tctcaaacct tcactcaaca cttccttccc caaagccaga 120
agatgcacaa ggaggaacat gaggtggctg tgctgggggc accccccagc accatccttc 180
caaggtccac cgtgatcaac atccacagcg agacctccgt gcccgaccat gtcgtctggt 240
ccctgttcaa caccctcttc ttgaactggt gctgtctggg cttcatagca ttcgcctact 300
ccgtgaagtc tagggacagg aagatggttg gcgacgtgac cggggcccag ga 352

<210> 1205
<211> 250
<212> DNA
<213> Homo sapien

<400> 1205
ctgttcaact tccaactcta aataggcacc attaaacaaa aaaccccagt attttaaatt 60
tctccagcac acattccagg atcaatgctc tgaactgtaa tcagctagta attcataacg 120
ggaatacagc cttagaatgg aagctatatt gcttccctgc cccctttctc ttacaattgg 180
agagtgtagg tattaaggga tacaaagtca gaggaagaat aattaaaaag aaaaatgccc 240
aaagctgcag 250

<210> 1206
<211> 275
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(275)
<223> n = A,T,C or G

<400> 1206
ctgctctcgn ngnctcactg gatggaccag cacttccgca cgacgcccct ggagaagaac 60
gcccccgtct tgctggccct gctgggtatc tggtacatca actgctttgg gtgtgagaca 120
cacgccatgc tgccctatga ccagtacctg caccgctttg ctgcgtactt ccagcagggc 180

gacatggagt ccaatgggaa atacatcacc aaatctggaa cccgtgtgga ccaccnnaca 240
ggccccattg tgtgggggga gccagggacc aatgg 275

<210> 1207
<211> 182
<212> DNA
<213> Homo sapien

<400> 1207
ccatctcctg ctcgaagtcc agggcgacgt agcacagctt ctccttgatg tcgcgcacga 60
tttcccgctc ggccgtggtg gtgaagctgt agcctcgctc agtgaggatc ttcatgaggt 120
agtcggtcag gtcccggcca gccaggtcca gacgcaggat ggcgtggggg agggcgtagc 180
cc 182

<210> 1208
<211> 260
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(260)
<223> n = A,T,C or G

<400> 1208
gctggttatg aactcctgac ctcaagtgat ctgccctcct cagcctccca aagtgctggg 60
attataggca tgagccactg gaattttttct tttttttttt ctttcttttt tttttttttt 120
ttaaattgan acaaggtctg gctctatcgc ccangctgga gtgcagnggc accatntcgg 180
ctcactgcaa cctctgcctg ctgggctcga gccatcctcc cacctcagcc tcccaagtan 240
ttgggactag aggtatgcac 260

<210> 1209
<211> 487
<212> DNA
<213> Homo sapien

<400> 1209
aaacccactc caccttacta ccagacaacc ttagccaaac catttaccca aataaagtat 60
aggcgataga aattgaaacc tggcgcaata gatatagtac cgcaagggaa agatgaaaaa 120
ctataaccaa gcataatata gcaaggacta atccctatac cttctgcata atgaattaac 180
tagaaataac tttgcaagga gagccaaagc taagaccccc gaaaccagac gagctaccta 240
agaacagcta aaagagcaca cccgtctatg tagcaaaata gtgggaagat ttataggtag 300
aggcgacaaa cctaccgagc ctggtgatag ctggttgtcc aagatagaat cttagttcaa 360
ctttaaattt gcccacagaa ccctctaaat ccccttgtaa atttaactgt tagtccaaag 420
aggaacagct ctttggacac taggaaaaaa ccttgtagag agagtaaaaa atttaacacc 480
catagta 487

<210> 1210
<211> 216
<212> DNA
<213> Homo sapien

<400> 1210
ccactcagct cagcgggcga cgtgccccta caagttggca gaagtggctg ccactgctgg 60

gtttgtgtaa gagaggctgc tgccaccatt acctgcagaa accttctcat aggggctacg 120
atcggtactg ctaggggca catagcgccc atggatgtgg taggtggggt actcgctcat 180
aggatggtag gtatcccggg ctggaaagat gtccag 216

<210> 1211
<211> 443
<212> DNA
<213> Homo sapien

<400> 1211
ccaaggtcag aggctgatgc aacaggccct cttctcccca gggccaggct cctgtccagc 60
ctgggcactg cccagagtga tggcattggt ccggatgctg ttctgtctct gcttggacac 120
cttcgcaaag atttctttca ggacagtctc aaaggctagc tcaacattgg tagagtccag 180
ggctgaggtc tccaggaaga gcagtccatt gttttcagcg aacattcggg cctcctcagt 240
gggcacttcc cgggcctggc tgaggtcact tttgttaccc acgagcatga cgacgatcgt 300
ggcttcagca tggtcataga gctccttcag ccatcgctcc accacagcat aggtctggtg 360
cttggttagg tcaaacacca ggagggcccc cactgcacca cgatagtacg ccgaggtgat 420
ggctcggtac cgctccaggc cag 443

<210> 1212
<211> 526
<212> DNA
<213> Homo sapien

<400> 1212
actgaaaccc gagtaaatgc tcaggctgct gcatatgaat acatggctgc atacatagaa 60
aatgcgaaac aggttggccg ccttgaaaat gcaatcgggt ggtatcatag ccaccctggc 120
tatggctgct ggctttctgg gattgatgtt agtactcaga tgctcaatca gcagttccag 180
gaaccatttg tagcagtggt gattgatcca acaagaacaa tatccgcagg gaaagtgaat 240
cttggcgcct ttaggacata cccaaagggc tacaaacctc ctgatgaagg accttctgag 300
taccagacta ttccacttaa taaaatagaa gattttggtg tacactgcaa acaatattat 360
gccttagaag tctcatattt caaatcctct ttggatcgca aattgcttga gctgttgtgg 420
aataaatact gggtgaatac gttgagttct tctagcttgc ttactaatgc agactatacc 480
actggtcagg tctttgattt gtctgaaaag ttagagcagt cagaag 526

<210> 1213
<211> 359
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(359)
<223> n = A,T,C or G

<400> 1213
ccagccattg cctgncattt ggtagtatag tatgattctc accattattt gtcatggagg 60
cagacataca ccagaaatgg gggagaaaca gtacatatct ttctgtcttt agtttattgt 120
gtgctggtct aagcaagctg agatcatttg caatggaaaa cacgtaactt gtttaaaagt 180
ttttctggta gctttagctt tatgctaaaa aaaataatga cattgggtat ctatttcttt 240
ctaagactac attantanga aaataagtct tttcatgctt atgatttagc tgttttgtgg 300
taattgcttt ttaaaggaag nnattaatat cataagttat tattaatatt gtgaacnca 359

<210> 1214

<211> 428
<212> DNA
<213> Homo sapien

<400> 1214
ccaagcttga ggcagcccta ggtgaggcca agaagcaact tcaggatgag atgctgcggc 60
gggtggatgc tgagaacagg ctgcagacca tgaaggagga actggacttc cagaagaaca 120
tctacagtga ggagctgcgt gagaccaagc gccgtcatga gacccgactg gtggagattg 180
acaatgggaa gcagcgtgag tttgagagcc ggctggcgga tgcgctgcag gaactgcggg 240
cccagcatga ggaccaggtg gagcagtata agaaggagct ggagaagact tattctgcca 300
agctggacaa tgccaggcag tctgctgaga ggaacagcaa cctggtgggg gctgcccacg 360
aggagctgca gcagtcgcgc atccgcatcg acagcctctc tgcccagctc agccagctcc 420
agaagcag 428

<210> 1215
<211> 414
<212> DNA
<213> Homo sapien

<400> 1215
ctgaagcact cttcagagac tacgtccaca gacactgatg ctgaggcctt tcttgtaagt 60
gaagaaaaag gaatgcagca aagaagagtt cgacattgga gtccttagtt ccatcaggat 120
cccattcgca gcctttagca tcatgtagaa gcaaactgca cctatggctg agataggtgc 180
aatgacctac aagattttgt gttttctagc tgtccaggaa aagccatctt cagtcttgct 240
gacagtcaaa gagcaagtga aaccatttcc agcctaaact acataaaagc agccgaacca 300
atgattaaag acctctaagg ctccataatc atcattaaat atgcccaaac tcattgtgac 360
tttttatttt atatacagga ttaaaatcaa cattaaatca tcttatttac atgg 414

<210> 1216
<211> 162
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(162)
<223> n = A,T,C or G

<400> 1216
cctggccgca gggtcccccg gtattgctgt tgctacgagg ttgggggca gcgattgtcc 60
tgtgggagcc accgttctcc tgggtcgggg accctcactt cttctggggt gtgctcannt 120
tctgcatgcc ccggatcttg tccagcangc cagaaatgaa gg 162

<210> 1217
<211> 392
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

<400> 1217

ctgaagtaga ggctggaact gaagctgaga ctgaggctga ggctgaaact ggagctaagg 60
gtgaggctgg aactggagct gaggttgagg ccagaactgg agctaaagtt gaggctggaa 120
ccggagctga ggttgaggct ggaactggag ttaaggttgc tggaagtgga gctgaggttg 180
aggctggaac tgaagctgag gttgaaggtg gaagtggagc cgaagctaga ggtggaactg 240
aggctgaaga ctgtgcttgc tggatccctg tagcctgttt tttggcaaat cttggaggaa 300
gcttanaagt ctggcttctt ccttttttcat ttgcattctt tttgttccag accttaaaaa 360
attaacgggg accatttttg tcaataatgc ag 392

<210> 1218
<211> 526
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(526)
<223> n = A,T,C or G

<400> 1218
ctgagctttc agcagataaa tcacagcaga aatagaatca ccctaggact ttcaatcaaa 60
agctggaagt ccaccttaca gaaagacaaa aagaaacccc tttttatatc ttaacaaagc 120
aatagctctc aagcagcaga gcatctcgag gaagaaagct tgcccggtcg ccatcccatc 180
atgccagagc gtgcagtgtc caccccttgac tacgctgggg aattgctgat tttttgaaaa 240
agcttaactt aacaatttct gatgtctatc ctttagagtt ctgtatgttc ccattttttta 300
ttcttctgaa ttttgaattg caagtagctg taaaatccaa tctttgagtg catgggggtg 360
ggtgtgaggc ggggctcanc ttcaaccccc tgtcctgtaa agcagtggct ggtttttcct 420
gagcccagcc ctgggaggtc gtggtangtg tggaggctgc agagctcctn cagatgctgc 480
cctcgctgtg cctcacacca nagaggatgg aagtgggctc tggtgt 526

<210> 1219
<211> 382
<212> DNA
<213> Homo sapien

<400> 1219
ctggccggcg gtgcagatct ggagtccagc ctcagggatg cgctactttc cattctctgc 60
attgaacatt cgttctgtca gcatccgctc cagcttcact gcatcagcgg caaacttgcg 120
gatcccgtca gagagcttct ccacagccat ctggtcctcg ttgtgcaacc aacggaaaga 180
cttctcatcc aggtggattt tttccaggtc actggcttgg gccgccttgg ctgagagcac 240
aggcaccagc ttggcgttgt cctgcagcag ctctcccagg agcttgggtg agatggtgag 300
gaagtcacag ccggccagtg ctttgatctc gcccgtgttg cggaaggagg cgcccatgac 360
aatggttttg tagctaaact tc 382

<210> 1220
<211> 127
<212> DNA
<213> Homo sapien

<400> 1220
tcgacctcct tgaagcagac caagtatagc aagcctctaa aaggactact gagaaacaga 60
atcagaaact ctagaactct agttagggcc cttcagcagg gctgcagagc ctccctggat 120
acccagg 127

<210> 1221

<211> 304
<212> DNA
<213> Homo sapien

<400> 1221
ccaccccgga gatgacacga ggctcacatg actctagaca cttggtggaa agtgaggcga 60
gaaaaacaat gacttgggcc aattacacga ctgcaaagct agagctgcca acagggctcc 120
agggagcttg gcttctgtag aagttctaag gaagcggtac gaactccacg gcggtggggc 180
gctaactagc agggacccct gcaagtgttg gtcgggggcc tcgggctgcc tgagctgaca 240
cgaggggagg ggtctgtgta gccaacaggt gaccgaaggg cttgcctgcc cacagcttac 300
ttgg 304

<210> 1222
<211> 309
<212> DNA
<213> Homo sapien

<400> 1222
ctgtcgcact cgtagctgca actcactcaa cttgtcttta gcagcaattt ctgcatagtc 60
attggcatgt tcacctacct ggatgtccgg gtgaactctc agcatgcctc cagcaaagag 120
ggagaacttg gtggaattgg agtgaagaca gatctggtgc tcaccagggg tatgggaagt 180
gaaagtgaac ctgccctcgg agccatactg ccgggccagg atgaccttgt cctctgggtc 240
ctccacctcc acaaacatgc caagccccgg ggtggccggc tggtactcct cccgctgctt 300
gtcatacag 309

<210> 1223
<211> 390
<212> DNA
<213> Homo sapien

<400> 1223
cctggcctgg gagccctgtg cctactagaa gcacattaga ttatccattc actgacagaa 60
caggtctttt ttgggtcctt cttctccacc acgatatact tgcagtcctc cttcttgaag 120
attctttggc agttgtcttt gtcataaccc acaggtgtag aaacaagggt gcaacatgaa 180
atctctgttt cgtagcaagt gcatgtctca cagttgtcag tctgccactc cgagtttatt 240
ggtgtttgtt tcctttgaga tccatgcatt tcctggttga atctcctgga actccctcat 300
taggtatgaa atagcatgat gcattgcata aagtcacgaa ggtggcaaag atcacaacgc 360
tgcccaggag aacattcatt gtgataagca 390

<210> 1224
<211> 407
<212> DNA
<213> Homo sapien

<400> 1224
ccttatgact acaacggccc acgagaaaaa tatggaatcg ttgattacat gatcgagcag 60
tccgggcctc cctccaagga gattctgacc ctgaagcagg tccaggagtt cctgaaggat 120
ggagacgatg tcatcatcat cggggtcttt aagggggaga gtgacccagc ctaccagcaa 180
taccaggatg ccgctaacaa cctgagagaa gattacaaat ttcaccacac tttcagcaca 240
gaaatagcaa agttcttgaa agtctcccag gggcagttgg ttgtaatgca gcctgagaaa 300
ttccagtcca agtatgagcc ccggagccac atgatggacg tccagggctc cacccaggac 360
tcggccatca aggacttcgt gctgaagtac gccctgcccc tggttgg 407

<210> 1225

<211> 250
<212> DNA
<213> Homo sapien

<400> 1225
ctgcagcttt gggcattttt ctttttaatt attcttcctc tgactttgta tcccttaata 60
cctacactct ccaattgtaa gagaaagggg gcagggaagc aatatagctt ccattctaag 120
gctgtattcc cgttatgaat tactagctga ttacagttca gagcattgat cctggaatgt 180
gtgctggaga aatttaaaat actggggttt tttgtttaat ggtgcctgtt tagagttgga 240
agttgaacag 250

<210> 1226
<211> 444
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(444)
<223> n = A,T,C or G

<400> 1226
cctttaggct gttgctctgg gcagggggtg ggggtgcggg ggcttacagt gggggccctt 60
agttggcaca ggttcggaag ggccccaggc agacatgaat tctcctgaga cttgaggtag 120
gttgcttcag ccagcccggg cggagaagaa gggcagagag cgaacatagg agtccagtcg 180
ggagcgaaag agctcacttt gcacagtttg gcccagcggg cacaggggat tcttcaccac 240
cagctccaca tacagcgcac tgtagatgtg gtgcagcaca tctcggatgg gtcccacgcc 300
caagtcagta ttcatgacaa ctttgatccc agtgggcgtc tcgtagtaat ggagtttgta 360
acggctagtt tggaaggcca ggaagccatc cttcatgtct agcggggaca tcttgctgac 420
aaacgancgg atagagaaga gcat 444

<210> 1227
<211> 491
<212> DNA
<213> Homo sapien

<400> 1227
gttagcctta catgttgtgt agacttactt taagtttgca cccttgaaat gtgtcatatc 60
aatttctgga ttcataatag caagattagc aaaggataaa tgccgaaggt cacttcattc 120
tggacacagt tggatcaata ctgattaagt agaaaatcca agctttgctt gagaactttt 180
gtaacgtgga gagtaaaaag tatcggtttt attctttgct gatgtccttt ctgcttgaaa 240
taacagtcac catacagcta aaggagagga gtttctttcc ttctaagtag gcagaaatgg 300
tatcattatg ttgccgctct ccaatctccc agagctcgct ctctagagaa tcaccttctt 360
tcgctttttt tttttttttg aggtagagtc tcactatgtt gcccagacta gccttgaact 420
cctgggctca agtgattctc cctcctcagc ctcccgagta gctggaacga actatagttg 480
caccactgca g 491

<210> 1228
<211> 279
<212> DNA
<213> Homo sapien

<400> 1228
ctgggcggat ctgatcaact aggcaacatc atgtccggat atgagttcat caacaagttg 60

actggagaag atgtatttgg aatcaccgtt cctctaatta caagtacaac tggagcaaag 120
ctgggaaagt ctgctggcaa tgctgtttgg ctaaacagag ataagacatc tccatttgaa 180
ttgtatcaat tctttgtcag gcaaccggac gattcagtgg aaaggtacct gaagctgttc 240
actttcctac cccttccaga gattgatcat atcatgcag 279

<210> 1229
<211> 199
<212> DNA
<213> Homo sapien

<400> 1229
cggccgaggt ccagtccaac ctgctcctca ttattgtata aatgagcaga atcaatatgg 60
cggaagccag cttcaattgc caatttggtg gcctctaaag ctttactttt aggaacctct 120
gcaggcgcat aggtgccaaa tcccaggaca ggcatgaagt gaccatcatt cagcttcaca 180
cactgatatt tcgaatcca 199

<210> 1230
<211> 237
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(237)
<223> n = A,T,C or G

<400> 1230
ctgcattgnt gnggaattca caactactca ggctgggaaa atacagattg gttcaaagaa 60
accaaaaacc agagtgtccc tcttagctgc tgcagagaga ctgccagcaa ttgtaatggc 120
agcctggccc acccttccga cctctatgct gaggggtgtg aggctctagt agtgaagaag 180
ctacaagaaa tcatgatgca tgtgatctgg gccgcactgg catttgcagc tattcag 237

<210> 1231
<211> 277
<212> DNA
<213> Homo sapien

<400> 1231
ctggaggtgc ctcagaaggt gcattctgct tcctgcaggg gcttgaaaca ccaaggcact 60
ccagggatcc tggagtcaaa gcagcagccc cggttgttgc actccttggg ggtgacatgg 120
gggtagccgc agtccaccct gtccttggct ggcacggcac actggtttgc agacaggccc 180
acgtactcct cagcagagct ggaggacagc aaggccagga ccagccccag catgcagagc 240
gctctggcag ccatgaccac cgtgggctcc gggacgc 277

<210> 1232
<211> 348
<212> DNA
<213> Homo sapien

<400> 1232
ctgcaacttt tttttttgc aattacagag tggtattcag ttaacagaac aacaattatt 60
tcgtataagc tgcatcagag acaactgaag atgaaaaaac taccatcccc atatataact 120
aatttgtgct gtgcaccaac aagaacctgc tttaaatttc catgccaatt tacaaccccc 180
atactgtacc aggcaaggtt agtggctatt gaaaatacca ccaggacagg gctatctaaa 240

gacacattcg gtagtgtgtt aactatacaa aaaaagacac tgtacagttt aaaaacaaat 300
cttacacagc cttacatttc aatttttttc tttaaaagga gtgagttg 348

<210> 1233
<211> 312
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(312)
<223> n = A,T,C or G

<400> 1233
ctgagcgtac ggccgcgttc atcccagccg cgggtgcccc cacgttgatg acagctacgt 60
tgcaattggt ctttgggatc tgatcatccg gcagcttgat ggcaagtcgc ttgtaggtgt 120
tcaggttgcc cgcaaagctc ctccctcgga gtcgaaccgn atnttgaaat ctcctctcgt 180
ccatcgcctt ctgcacatcc tgagtcatct gcacgcactc catcagcggc aggcgcacgg 240
ngtggttccc gttcagtgac acgacgcaag ctggggtgtc cggggtggcc tctagcaagg 300
cnatgactgc ct 312

<210> 1234
<211> 151
<212> DNA
<213> Homo sapien

<400> 1234
ccggccgcgg gcataaaagg cgccaggtga gggcctcgcc gctcctcccg cgaatcgcag 60
cttctgagac cagggttgct ccgtccgtgc tccgcctcgc catgacttcc tacagctatc 120
gccagtcgtc ggccacgtcg tccttcggag g 151

<210> 1235
<211> 250
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(250)
<223> n = A,T,C or G

<400> 1235
ctgcaccttn gggcntnttt ctttttaatt attcttcctc tgactttgta tcccttaata 60
cctacactct ccaattgtaa gagaaagggg gcagggaagc aatatanctt ccattctaag 120
gctgtattcc cgttatgaat tactagctga ttacagttca nagcattgat cctggaatgt 180
gtgctggana aatttaaaat actggggttt tttgtttaat ggtgcctgtt tagagttgga 240
agttgaacag 250

<210> 1236
<211> 154
<212> DNA
<213> Homo sapien

<400> 1236

ctgatcctca ctattgtggg caccatcgct ggcatcgtca ttctcagcat gataattgca 60
ttgattgtca cagcaagatc aaataacaaa acgaagcata ttgaagaaga gaacttgatt 120
gacgaagact ttcaaaatct aaaactgcgg tcga 154

<210> 1237
<211> 375
<212> DNA
<213> Homo sapien

<400> 1237
ccactggatc tttgggatta aagctctgtt ggatttgtac ctcagaggaa gatcaagtgg 60
ctgatccttt ggactctgta aagagcattc ttctagtcag agggtggaat ggcagcagca 120
actggaagaa aatgagtttt ttggtgccca cacccaagag cacacacatg ctgcactgtc 180
tcggaaagca gggccagcta gagccaccat gttcttcctt acctcagttt acctgcggcc 240
tgcgctgcac tgcagatgcc caccctgccc tgggtctggc cggcggaagc tctgtccaag 300
gtccacacac ctccaggttt acgccaacat ccttgtgccc tccccacctt ctcttccaac 360
gcattaggtg cattg 375

<210> 1238
<211> 454
<212> DNA
<213> Homo sapien

<400> 1238
gtcaagatca agttcaatat catcgcctct ctctatgact acaaccccaa cctggcaacc 60
tacatgaagc cagagatgtg gggaagtgc ctggactgca tcaatgagct gatggatatc 120
ctgtttgcaa atcccaacat ttttgttgga gagaatattc cggaagagag tgagaacctg 180
cacaacgctg accagccact gcgtgtccgt ggctgcatcc taactctggt ggaacgaatg 240
gatgaagaat ttaccaaaat aatgcaaaat actgaccctc actccaagag tacgtggagc 300
acttgaagga tgaggcccag gtgtgtgcca tcatcgagcg tgtgcagcgc tacctggagg 360
agaagggcac taccgaggag gtctgccgca tctacctgct gcgcatcctg cacacctact 420
acaagtttga ttacaaggcc catcagcgac agac 454

<210> 1239
<211> 483
<212> DNA
<213> Homo sapien

<400> 1239
ctgccaggct gaaaagaagc ctcagctccc acaccgccct cctcaccgcc cttcctcggg 60
agtcacttcc actggtggac cacgggcccc cagccctgtg tcggccttgt ctgtctcagc 120
tcaaccacag tctgacacca gagcccactt ccatcctctc tggtgtgagg cacagcgagg 180
gcagcatctg gaggagctct gcagcctcca cacctaccac gacctcccag ggctgggctc 240
aggaaaaacc agccactgct ttacaggaca gggggttgaa gctgagcccc gcctcacacc 300
cacccccatg cactcaaaga ttggatttta cagctacttg caattcaaaa ttcagaagaa 360
taaaaaatgg gaacatacag aactctaaaa gatagacatc agaaattgtt aagttaagct 420
ttttcaaaaa atcagcaatt ccccagcgta gtcaagggtg gacactgcac gctctggcat 480
gat 483

<210> 1240
<211> 358
<212> DNA
<213> Homo sapien

<400> 1240
cctttatgga tgaaagtacc cagtgcttcc agaaggtgtc agtacagctc ggaaagagaa 60
gcatgcaaca attagatccc tcaccagctc gaaaactgtt gaagcttcag ctacagaacc 120
cacctgccat acatggatct ggatctggat cttgtcagtg actttatgag agtttctgcc 180
acaaggtgcc caagaggaga ggaatgggaa gagtgcccca gcacgtggtg actgcgtgat 240
ttctgctcra tgcctttmts atamstgacc acactgasgg cgaattmcag cacactggcg 300
gccgttacta gtggatccga gctcggtacc aagcttggcg taatcatggt catagctg 358

<210> 1241
<211> 194
<212> DNA
<213> Homo sapien

<400> 1241
ccaaaggttc gtaatgccat ctctgcacca atctcctccc ccatagcaat aagggcaatc 60
cccagaacag ccactccctg atgtgctccc atgtcagcag ggcttccttt cttgtccttg 120
tctttctttt ccttcttgtc tttgtcttcc tccttctctt tggagtcaaa gtgttcgcta 180
caaatgtgga gcag 194

<210> 1242
<211> 316
<212> DNA
<213> Homo sapien

<400> 1242
ccttgttctc actgccctct aagggaactt ggtcactcgg cacttttaag cctcagtttc 60
tccagttcaa taataaggac aagagctttt cccatgcatt ctctttcccc gggaaagttg 120
actgaggtga ccagtaatag aattgaaaag ggagagtgtc ttcagtgcaa tgtggcatcc 180
tggattgggt cttggaacaa aaacaggaca ttagtgggaa aattggaaat ctgaaaaaag 240
tctgaatttt agttaatata ccaatttcag tctcttggtt ttgacagatg taccatggtg 300
atgtaagatg ttgacc 316

<210> 1243
<211> 275
<212> DNA
<213> Homo sapien

<400> 1243
aaaagggtga tgaaagtatt atgtataata ttataatggt aaatatgtga tatgaatttg 60
ttgaaatcaa cagaatatac agcataaagg gttaattcca attcacaaaa atataaataa 120
ataggagatt aggaattcca ggatagaatg cagacaatat agaaaatatc taatgtcatt 180
acaaatgtat gaaatcagaa gaggtgccaa gtgacctcag aaatagtgta gtcaataaaa 240
gaataaagaa agtgcacgtc agaactgtac cccag 275

<210> 1244
<211> 235
<212> DNA
<213> Homo sapien

<400> 1244
ctgctgcgct tggataacaa gtaattcaac gcacgcactt aacagaaatg ttaaactata 60
acaagcacca tttgaggatt aacaggaaca ttttttgaa gatttcaaac gaactcgact 120
ttcagtataa ttgtacctaa agtatttata aacagctcat cggagcctct atttgtcata 180
gacttttgag ttgattgttg ggaccacata ataggaccat ttttttttg tcttt 235

<210> 1245
<211> 640
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(640)
<223> n = A,T,C or G

<400> 1245
ctgatgatgt tccacaaaag agcaaaacat acacaatctg gttccactct acagaaatcc 60
tggaactgga ctacaaaggg aatagacagg gtgtggcagg aggggttcc tcacggttgg 120
agtgcgaggt tagggacagg aatagaaggy aggtaataaa cattcatgtg gtattaacag 180
ggcagatgtg tcaatrtatt tscaagttta gcataatata ggtataaaaa ttaaataaaa 240
atagtttaka tgtgtgtgta tatatgggtt aatacacaac acatacctcc tagagtcatt 300
acctgagagg ttctacaaga aaagacagca aattaacaaa aaatacaccc agaatcaaga 360
tttgagtttt ggttcctttc atagcagaat ggtatgcaac atttcttgga aaaatggcta 420
atcctagggc ttggaaagag aatataggag taaagtctac aatttctcat ggtacccaga 480
aaataagaaa gggttccaaa atgaagaatc gctccttttg caaaccttat ggtaacaaat 540
ataatattta taaaaagtga attangtaat atgttaatgg agaaataaac atcattatga 600
aatgctatct taacaaaaaa targagaaaa twttagtttt 640

<210> 1246
<211> 509
<212> DNA
<213> Homo sapien

<400> 1246
aaactttcaa agaatcactt ttaggcttac aaaaataaat atttgtcaaa atgttcaata 60
aatattacat aaaactagca gcaaaaagta tctagaaatc tgtcgtgtgc aaatagtttt 120
cttcccaact atcattccca tggtcccaaa taaattttag aatctagtcc catccccttc 180
ctagacaagc tgcgttcaac aatctccaag agacaaagta agattggaag tttaaggaca 240
cgcacacaag acatatatat aaaattctct gaatgtgcaa taaaagaagt actttgtaaa 300
aagttatggg caaaatgtac aagggcctaa acctagacta attgaaatag caccataaca 360
aatgacctca atactgtcaa gtgcacctac ttaataaaag ttttagaaca aggcacaata 420
cacttgaaaa tctattgcac tttaggaaat ttttgccgtc ttcctatgcc actgtaaaaa 480
gatggagcgt tttgatcacc gcattctgg 509

<210> 1247
<211> 310
<212> DNA
<213> Homo sapien

<400> 1247
catatgtgga actattcttg gaaagtctac aaagtgaaat ctatcgagtt atttctcatt 60
tgcaaagtga tcctttgagt catttctcat aatctataat ctgaatgtta atactgatat 120
ttttaaaagc cctacatccc aacagaccag gccatctaga tatttcagcg tggtgtctca 180
ggatgagtaa acaaacagct aaaaatatat gacttatgta aactagagtt acaggagtta 240
ctagcttttc tgaaagggat atattctaag tattttttct taaaaaaaaa aaaargggggg 300
gggggggtt 310

<210> 1248

<211> 640
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(640)
<223> n = A,T,C or G

<400> 1248
aaagatataa aactatggag aaaactgcta aagggtatcc ctgaccttta tgatgatgca 60
gctattttcg aggccaaaaa atcattttac tgggcaagaa aaacatctca ttcctttgtc 120
gtgaatatcc ttgctcaggc tctttatgaa ttattttctg ccacagatga ttccctgcat 180
caactaagaa aagcctgttt tctttatttc aaacttggtg gcgaatgtgt tgcgggtcct 240
gttgggctgc tttctgtatt gtctcctaac cctctagttt taattggaca cttctttgct 300
gttgcaatct atgccgtgta tttttgcttt aagtcagaac cttggattac aaaacctcga 360
gcccttctca gtagtggtgc tgtattgtac aaagcgtgtt ctgtaatatt tcctctaatt 420
tactcagaaa tgaagtatat ggttcattaa gcttaaaggg gaaccatttg tgaatgaata 480
tttggaactt accaagtcct aagagacttt tggaagagga tatatatagc atagtaccat 540
accacttata aagtggaaac tcttggacca agatttggat taatttgttt ttgaagtttt 600
tggnatataa atatgtaaat acatgcttta attgcaattt 640

<210> 1249
<211> 1108
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1108)
<223> n = A,T,C or G

<400> 1249
caaaataaat ttcaattcaa tgaaaagtaa ataacttagg gatctataaa tgacactgca 60
atgtatcttg ttccattttt aacaggaagt ccttcatgca aatgtgtgag tctcccagga 120
tgcatgaagc tccagccttt tcgtggtgac tcaatagagc aattgtacct tacaaatktg 180
caaccacctc cctgaaagtc ttctcccacg ttattaagtg caatgyttat ggtaaatgta 240
gaagcatcat gatgaggacg aagagaacgc tgtcgttcag gggagtattt tactacaaaa 300
ttcagtagtg caaatccctt cgtataatag cctgcaaaga ccttcagtgt aactggtgca 360
atgaactccc ggataaaatg aagccataca ttctccagat caacttgctt catgtggata 420
tcatcagttg ggacattttc ataaccacca gatatacggc tatcatgatg tttttcccca 480
gaccatttgc cgtaatgttc catttcttct accaattcat cacaggnctt tttcagaaaa 540
tatggggaac cmaaaagaca tctggacagg gctgttcaam ctatattttc agtgaaaatc 600
tttgaataat ccmcggttta tatacttttc cttccagtcc acaggatttt caaaaatctg 660
ccagaggtca ttgttataat gggaagtatt gtaattagca gtggataata gccttccaaa 720
ttcatgtcta ttagaaatgt acataaatac accctttggg gggctgagca tttggaatgt 780
ttccggagta ggggagtctt tttccctttg taaagtcatt tctctagcat ttcggcaaag 840
agccatatca ggatccagtt tatcacgaac aaaatagctc ctttcattca tctctgatcg 900
gagtgtcttt cctttaatta agtacacatt agccatatat gggacattcc atactcctac 960
tctattccct tgaacaatat ccacataatc ttcagatcgt gcatagtatc catcaggact 1020
caatgctccc cagaaattgg accacagctt tccatgacga gttacaagag gagcaatgat 1080
ctttctgttt tgttcaatca aaattttt 1108

<210> 1250

<211> 567
<212> DNA
<213> Homo sapien

<400> 1250
ctgaatattg aactggaagc agcacatcat taggctttat gactgggtgt gtgttgtgtg 60
tatgtaatac ataatgttta ttgtacagat gtgtggggtt tgtgttttat gatacattac 120
agccaaatta tttgttggtt tatggacata ctgccctttc attttttttc ttttccagtg 180
tttaggtgat ctcaaattag gaaatgcatt taaccatgta aaagatgagt gctaaagtaa 240
gctttttagg gccctttgcc aataggtagt cattcaatct ggtattgatc ttttcacaaa 300
taacagaact gagaaacttt tatatataac tgatgatcac ataaaacaga tttgcataaa 360
attaccatga ttgctttatg tttatattta acttgtattt ttgtacaaac aagattgtgt 420
aagatatatt tgaagtttca gtgatttaac agtctttcca acttttcatg atttttatga 480
gcacagactt tcaagaaaat acttgaaaat aaattacatt gccttttgtc cattaatcag 540
caaataaaac atggccttaa ctaaaaa 567

<210> 1251
<211> 655
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(655)
<223> n = A,T,C or G

<400> 1251
gaaagaaacc aatttaatgc caccaaacat aagcctgcta tacctgggaa acaaaaaatc 60
tcacacctaa attctagcag agtaaacgat tccaactaga atgtactgta tatccatatg 120
gcacatttat gactttgtaa tatgtaattc ataatacagg nttaaggtgt gtggnatgga 180
gctaggaaaa ccnaaggagn aggaaattat nnaaaagaac tgnaggtnaa gtataaagtc 240
atatgcctga tttcctcaaa ccttttggtt ttcctcatgg cttctggctt tatattttta 300
tcacaaacca agatctaaca gggntctttc tagaggatta ttagataagt aacacttgat 360
cattaagcac ggatcatgcc actcattcat gggtgntcta tgttccatga actctaatag 420
cccaacttat acatggcact ccaaggggat gcttcagcca gaaagtaaag ggctgaaaaa 480
gtagaacaat acaaaagccc tcgtgtgggg ggaactgngg gctcactctt acttggcctt 540
cattcnaaac aggttgggnc tttcntgcga ngatctctca gggnggtaaa aactttntgg 600
ntttcaacan aanaggtttg gntgaatgat tactcggcng acacctaagg gatcc 655

<210> 1252
<211> 672
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(672)
<223> n = A,T,C or G

<400> 1252
aaantgcaaa aacccagaag accaataatt ctgaaacttg gcatgagtgt gcccagtcag 60
cagcttgcaa agagaggatg tgtcagttac tacaattgct gtactccttt agctgagtcc 120
ttcaactttc tccttcttgc cagtaaatac tacgttgtaa ttcatatgac tgagatctta 180
gtatcacagg atttttagct cccatgcctc cttcaaaatt gtttacatgg atttgtttct 240

attctctgta ggccatattc caaacacatt cacttctaaa tccaacacaa gtgaaggacc 300
agccaggatg aaacacttca gcaatcattt tgttaaaaat aacatcctgg tcatcaagct 360
aagcataagc acctcttgta taacaattca tcttaaaagc ttaaagtaca ataataaaaa 420
taactgcctg aaaactggaa atgaaataca acagaaaaac tgaagcatta gtaatttttg 480
caagtaaccc aggtacagta catttgattt catagagggt gttttctgat gtttaaggag 540
agggtagaag gggtaggaaa acttggcaag gaagatggaa acagcacaac cagttatttt 600
gcttttaata aagtaaatgt aatgacagga gtagggaggt gacaaacaca tcnatatata 660
tttttcttat gg 672

<210> 1253
<211> 644
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(644)
<223> n = A,T,C or G

<400> 1253
ccaaatattt gttagaaact tctggtaact tagatggtct ggaatacaag ttacatgatt 60
ttggctacag aggagtctct tcccaagaga ctgctggcat aggagcatct gctcacttgg 120
ttaacttcaa aggaacagat acagtagcag gacttgctct aattaaaaaa tattatggaa 180
cgaaagatcc tgttccaggc tattctgttc cagcagcaga acacagtacc ataacagctt 240
gggggaaaga ccatgaaaaa gatgcttttg aacatattgt aacacagttt tcatcagtgc 300
ctgtatctgt ggtcagcgat agctatgaca tttataatgc gtgtgagaaa tatggggtga 360
agatctaaga catttaatag tatcgagaag tacacagaca ccactaataa tcagacctga 420
ttctggaaac cctcttgaca ctgtgttaaa ggttttggag attttaggta agaagtttcc 480
tgttactgag aactcaaagg gttacaagtt gctgcccacc ttatcttaga gttattcaag 540
gggatggagt agatattaat accttacaaa gagattgnag anggcatgaa acaaaaaatg 600
yggactattg aaaatattgc cttcgttctg gcggaggttt gctc 644

<210> 1254
<211> 438
<212> DNA
<213> Homo sapien

<400> 1254
aaagggcatt tgaggggagg attattgcta tgaatgaaaa aaatatttta gcttagacta 60
agctacctgc cttcaaaata gtttagggac caccaccata ttttattttg tttttatttt 120
tgaacatttt tctaatgatt tggagagaaa actatttaca aaaattccac atatcagtga 180
tacaatttct tgctgtcacc aattttttat aatagcagag tggcctgttc taagaaggcc 240
atatttttta agttatcttt cagggtaaca tggaaatact ataaagttgg atgtcaaact 300
ttaatatgtt ttcagtgttc tctaattttt tggaattttt gtagacttta cacctggaaa 360
aaaagatttg taaaatcacc ggaacaattg tgtgctttat tttataggta gtggttatta 420
gtattacatc cccatttt 438

<210> 1255
<211> 519
<212> DNA
<213> Homo sapien

<400> 1255
caagcacagg ggagtttata gttctgatgt ctttgacatt ttccctggaa cataccaaac 60

cctagaaatg tttccaagaa cacctggaat ttggttactc cactgccatg tgaccgacca 120
cattcatgct ggaatggaaa ccacttacac cgttctacaa aatgaagcat cttctgagac 180
tcacaggaga atatggaatg tgatctaccc aatcacagtc agtgtgatta ttttattcca 240
aatatctacc aaggaatgac caggagaata agatcctccg atgttcgcaa tggtgtggtg 300
tcaggaggct gcctcttaga caatctccag atgtactgtg atgtgagttt gaaaaagagt 360
tcctgaagta ccacatctgg gagacatgcc actagctgag cttcccaaaa gtctaccaag 420
agctgaggaa ttgtatcttc atccttagca caaagcacct taaaaacagt aaaaggagcc 480
tctatattcc agataaatat agcactgata aagcgacag 519

<210> 1256
<211> 178
<212> DNA
<213> Homo sapien

<400> 1256
ccatgcagga gttcatgatc ctcccagtcg gtgcagcaaa cttcagggaa gccatgcgca 60
ttggagcaga ggtttaccac aacctgaaga atgtcatcaa ggagaaatat gggaaagatg 120
ccaccaatgt gggggatgaa ggcgggtttg ctcccaacat cctggagaat aaagaagg 178

<210> 1257
<211> 255
<212> DNA
<213> Homo sapien

<400> 1257
gggtccactt gctgccccat cattgtatca ccttccttca atcttttggc tgccactctc 60
atgtagggat ccacggtgag gaacaaagct tcaagcagga cctctccatt ttttaagggt 120
gggagctcag atgtcttcaa ctcaaagtca ctattagtag gatagccaac aaagtgcttc 180
ttcagggtcc atgtcttagt acgaaccatc ctgaagctca ggagcccgaa ggttccactg 240
cctggggaag gcggc 255

<210> 1258
<211> 630
<212> DNA
<213> Homo sapien

<400> 1258
aaaactaaaa gcatcactgc tgaactccag ctcagtcttc ccattttata atgaggactc 60
tgaagtttat agaggtcaag gacttgtcca aagctttaga tatgtagtgt ctgtgccctt 120
ttcctctaag tttctcctag agaatgtggg ggctcaggaa cagagaaaat aaggtgcaaa 180
aagtagaaat gggtggtgtt tctcaaagtg tggtccatct gcatcctagt gactggggtg 240
cttgttaaaa tgcagattgc tgggccttat cccaatctga ccaaatcatc tcaggatcta 300
ccttttgaac aaacttgcct aggtcaaatt cactcttgtg gaagtttaag tacttcagaa 360
acaagacagc cacagaaggt gcacctgcta atttggtggc ttccagtgcc tcatctgtaa 420
cttctggtga aatcctgaga tgtcttactt tacattgttt acatcccata acattccaac 480
atttagaaat tcactcgagc ttatttttct tacttgttta gcactaaatg aaaatagctc 540
cctgaagtta aggagtttat atacagtaat tcatgcaagt gtgtaaatta aacagatgac 600
tttccccccct aatatctaat gcacagcaag 630

<210> 1259
<211> 159
<212> DNA
<213> Homo sapien

<400> 1259
aaaatttaca gataaaggca gttcaatact gccactgaga agtacatctc ttaacatata 60
caactttcag gccacagttt tgaaggtctg aagtattaag ttggtttgat gaattagtcg 120
gttggcactt acgaacacat ttattgcctt gccatcttt 159

<210> 1260
<211> 115
<212> DNA
<213> Homo sapien

<400> 1260
aaaaatacta taatttcaaa acttccaaat ttcaacagat gccagtgttc tctccttttt 60
tcatatggga aaatttcttt caaaattatt tgacgcttgg acaaaaattc cacag 115

<210> 1261
<211> 280
<212> DNA
<213> Homo sapien

<400> 1261
aaaatattgt ttatctttat ttattttgtg gtaatatagt aagttttttt agaagacaat 60
tttcataact tgataaatta tagttttgtt tgttagaaaa gttgctctta aaagatgtaa 120
atagatgaca aacgatgtaa ataattttgt aagaggcctc aaaatgttta tacgtggaaa 180
cacacctaca tgaaaagcag aaatcggttg ctgttttgct tctttttccc tcttattttt 240
gtattgtggt catttcctat gcaaataatg gagcaaacag 280

<210> 1262
<211> 144
<212> DNA
<213> Homo sapien

<400> 1262
aaattatttg atgagttcca cttgtatcat ggcctacccg aggagaagag gagtttgtta 60
actgggccta tgtagtagcc tcatttacca tcgwttgtat tactgaccac atatgcttgt 120
cactgggaaa gaagcctgtt tcag 144

<210> 1263
<211> 487
<212> DNA
<213> Homo sapien

<400> 1263
aaacatcttg ataatttgtt gttgagagct gttcattcta aaatgtaatg aaattcagtc 60
tagttctgct gataaagatc atcagttttg aaaggttact gattttcctc ttccctctta 120
gtttttttacc caatatatgg agaagagtaa tggtcaatct taacattttg ttttaattgt 180
ttaataaagc tgctgggcag tggtgcagca ttcctaccta gtgtcataaa agcaaaatac 240
ttacatagct ttcttaaaat ataggaatga cattacattt ttaggagaaa gtaagttgct 300
ttgcaccgcc tacttaattc ttttccatat attgtgatac aaacttttga atatggaatc 360
ttactatttg aatagaaatg tgtatgtata atatacatac atacataagc atatatgtgt 420
gtgtgtgtgt gtatatatat atatatgcat gctgtgaaac ttgactacac aacataaatc 480
actttttt 487

<210> 1264
<211> 250

<212> DNA
<213> Homo sapien

<400> 1264
ctgcttcaac agagtggcag caaccaagct ggagtccaag ccccctgata aaaggcagcc 60
aatccttctg tctgtcatca aacgtttctt tacagcatta ttaaaaagga tcctgaggtt 120
gttcttcaca gtttctatct caaaacctgg aaagagtttc tccacattgt catagagggc 180
gtgcaggggt tcatcccgac agtgatgata tttaaccatt tccacggatg caactttgcc 240
atttggcttt 250

<210> 1265
<211> 394
<212> DNA
<213> Homo sapien

<400> 1265
aaatatttgt tccaaccttt ttcgttggtg gcatttatgg ctttggagca ctgtcaggcc 60
catgttcatt accgtgagct cctgtgcatc tcctaatttc caaactagcc tggaaaacgc 120
ctccattgac catgattggt tcatggtcct gtgcatggaa catcatatgt tcagggagat 180
aaagaactct gatagtggca cctgggtaaa aagtacaatc cattatatct ggatatcaag 240
atcttttgca gttgaagaga ggtattgcca cagagaaaat tataggagca gaagaaagtc 300
aatgaaagtc aatgatgaca ctccattagg aaccagaaag atggtattta tttatacata 360
taataggtgt aagagattag aggaagcctg tcac 394

<210> 1266
<211> 229
<212> DNA
<213> Homo sapien

<400> 1266
ccacagttgt atcatatagc atctctaaca tttcatctag gattatctag tatagatctt 60
actatatttg gggctatgtt gtatacaatg ttaacaagaa catatcttct ctgcatatat 120
gtgtgaatta taaagaaaag catgagaatg actctaagtt caacaaacat gggtgaatct 180
ctatgtgctc ccagtgtcct ggatgggctc cccagcaagc cattcctcc 229

<210> 1267
<211> 722
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(722)
<223> n = A,T,C or G

<400> 1267
aaatcttatc aactttccaa attttcatac taaaatatat tattgtatta atacaaacta 60
cagtattata cactacactg tgtaataaat aaagaaatat aaaaataaga cacataaata 120
taaaagtttt ctaaaactaa aagtacatat gtcagtaaga agggtattaa tactgccagg 180
tttgaagaca tacagtacaa aaatgttgca cagatctata aactaaaaga aataaaataa 240
tactgatagg taaaaatcag ctaatgttgt taataaattg ggtccataat aactaacatt 300
tggaaacagt tatgagccaa ataacaatag catgtccatg tctgaaatgc aagtacatgg 360
ataaagcaga ttagaaaatt tccctttcgt ttctgtagag aaattctgaa aatcaatcaa 420
cataaaatca ataccgagga attgaaggat gaaatgtccc agtgtttcag tttctctgac 480

agagtcagtg gttttaagtt ttatttggga attttgatac aagagacaaa tcaacaaatg 540
ctagttattg taggccacac attggatgaa ggcgggttag agccttgaaa atactgagaa 600
atggcactta cagcacacag gtcttgctta agggcaaagg agatacaaag cttcatgnca 660
tatccttcat atggtaccac atattcaaac accatcccaa cactgatctg atgattttgc 720
tg 722

<210> 1268
<211> 407
<212> DNA
<213> Homo sapien

<400> 1268
gatgacacaa gcagctaata accatttctg ggtttctgcc taacccccta attgtctgtt 60
aaagccaatt ctctgggtgt cccagtgagt ggtggctttt tttctttcca cattggcaca 120
ttcacttctc ccactcttgg catgtaagaa ataagcattt acataattgg aaaaatctgg 180
atttctgatg ccaaagggtt aaagcttctt ggatttcatt tcattgatat acagccacta 240
ttttattttt gatcagtggc ctttgggcca ctgttcaggg tactgaccat cagtgtcagc 300
attagggttt tggtttttgt ttcttttggg tatttctttt ttggcacatg tgaatcttgt 360
tttgtgtaaa atgaaattac tttctcttgt tctctgatga tgggttt 407

<210> 1269
<211> 675
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(675)
<223> n = A,T,C or G

<400> 1269
ctgaaaaaga gtgatcctca atatcctaac taactggtcc tcaactcaag cagagtttct 60
tcactctggc actgtgatca tgaaacttag tagaggggat tgtgtgtatt ttatacaaat 120
ttaatacaat gtcttacatt gataaaattc ttaaagagca aaactgcatt ttatttctgc 180
atccacattc caatcatatt agaactaaga tatttatcta tgaagatata aatggtgcag 240
agagactttc atctgtggat tgcgttgttt cttagggttc ctagcactga tgcctgcaca 300
agcatgtgat atgtgaaata aaatggattc ttctatagct aaatgagttc cctctgggga 360
gagttctggt actgcaatca caatgccaga tggtgtttat gggctatttg tgtaagtaag 420
tggtaagatg ctatgaagta agtgtgtttg ttttcatctt atggaaactc ttgatgcatg 480
tgcttttgta tggaataaat tttggtgcaa tatgatgtca ttcaactttg cattgaattg 540
aaatttgggg tggatttata tgtattatac cctgtcacgc ttctagttgc ttcaaccatt 600
tataccattt tgnacatatt tttacttgna aatatttacc tgncccggcc ggccgtcgaa 660
agggcgaaat tcaac 675

<210> 1270
<211> 268
<212> DNA
<213> Homo sapien

<400> 1270
ccatcctggg cggagctaaa gttgcagaca agatccagct catcaataat atgctggaca 60
aagtcaatga gatgattatt ggtggtggaa tggcttttac cttccttaag gtgctcaaca 120
acatggagat tggcacttct ctgtttgatg aagagggagc caagattgtc aaagacctaa 180
tgtccaaagc tgagaagaat ggtgtgaaga ttaccttgcc tgttgacttt gtcactgctg 240

acaagtttga tgagaatgcc aagactgg 268

<210> 1271
<211> 307
<212> DNA
<213> Homo sapien

<400> 1271
cctactcttc tccgtccatt gtactatctg cccgtggtgg ggatggcagt aggatcatat 60
ttgatgactt ccgagaagca tattattggc ttcgtcataa tactccagag gatgcgaagg 120
tcatgtcctg gtgggattat ggctatcaga ttacagctat ggcaaaccga acaattttag 180
tggacaataa cacatggaat aatacccata tttctcgagt agggcaggca atggcgtcca 240
cagaggaaaa agcctatgag atcatgaggg agctcgatgt cagctatgtg ctggtcattt 300
ttggagg 307

<210> 1272
<211> 798
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(798)
<223> n = A,T,C or G

<400> 1272
ccattgctag aaattgaatc acaaataata gctaataatt tttcattttt caaaaaagat 60
catttggata gcagctatgt ataaaatgga aaataaaaaa ttattctatt ttgcatgaat 120
agttcagact ttcccatacc acagccaagc agtaactaaa attaggatct taattttcaa 180
tgataaaagg tctaaggttc atttaattat gctcctttaa cactgtcttt ctagattttt 240
cacccagtat tttcaaaatt tgggaatgta aacaattgat atatttattg tatgttggct 300
agcagttcat ccttctgcaa aatatgcatt cagagaaatg tgaagcttgt tttaatgaag 360
acttaaacca tttgtgtcat ttgtgttttc atattcaaat acaccaaatt aaaattctga 420
acctatattt ttcatcatta acttcctaat ataccagaac atataccttt ttcatgtaaa 480
gttggcaatg ggatatggca gttttatttt tgaaaaatat gtaacatgac tttaatattt 540
ttatagtttt cagaattaga aacataggaa gggaaaatgt tttaattaga taagtcaact 600
ttttatgggc tgnagtggng actataatag caaattataa agcattatta aatggttata 660
ataattttaa tattacctca ttatgaatta actaaaataa agnggagtga tatttttaat 720
gggtgntcat actggagctc ctgagatata tgatttgcta ttgactcact ggntgattga 780
ataatatatt actcgcgg 798

<210> 1273
<211> 664
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(664)
<223> n = A,T,C or G

<400> 1273
aaaatatacc ttttcacagg tagcaagaaa tagtacatgt aataagtctt tatgactgga 60
atgatccaga aatatcacaa agcatgagta aacacatata taaaagtagc tcatcatttc 120

caaaagttaa cctttagcct ttgtgtaaaa taaatggtgc caacaatctt tataatgtag 180
caagctttcc ctgtttaata tccaaaaaat ggagggtggg gaggttgaag aaaaataaga 240
aaagttagca aataagatag tgaaaagacc aatgcagaga aaagtttatg taatcaaatc 300
ttgctttgtc tccacattat cacattttaa gtggataaat ttatgtaaac agaaaaagat 360
gtccacaaaa ccatatctat agatgtcatt tggaagcatc aagaaattga taagtatgtg 420
gtgaattaaa attactttta taatgttttg ctttcattaa tgtttgttat tgcaaaaatg 480
taagatttcc tacaattttg tcttcaaatc ccaatctagc ccttcaaact tttatccagg 540
ttctccagaa tatttggagt ctttgttatc aaagcacaag gaaagctggc attcattatc 600
agacttcgct gctttacaat ganttcaaat catttcatga tacaaataaa gtgcctctga 660
ctgg 664

<210> 1274
<211> 153
<212> DNA
<213> Homo sapien

<400> 1274
ccacaataaa gtttacttgt aaaattttag aggccattac tccaattatg ttgcacgtac 60
actcattgta caggcgtgga gactcattgt atgtataaga atattctgac agtgagtgac 120
ccggagtctc tggtgtaccc tcttaccagt cag 153

<210> 1275
<211> 504
<212> DNA
<213> Homo sapien

<400> 1275
aaaattctga taaaaattta ctcaattaca ttttatacat taatatttag tgaatttgtc 60
caaaaaggct atgtttaatt tatgtgtaaa aataacaaaa gatgtatcag tcagtctctg 120
ggcaataaga aaggaagaaa gccttgctag aaataataaa taatctcacg caaaaggcca 180
ggtgacataa gaatactaca ataatcaata tgttttcttt gtatttacaa taaaatccat 240
ctgttaacac tgtgatagaa aaaataatca gtccacatca tgtaataaaa acaggctttg 300
aggatgatta tacctcttat aataaaaaca tacaaggatt tctcacagct aaagtacttt 360
tcaactttga caactaatga cagtcatggg tgaaggtaaa actgacagag tactttagat 420
cagctatgtc ctacagtcaa ggaatcaagg gcattaccca tttaccaagc agcaaaaagc 480
actttcattt ttccagaact attt 504

<210> 1276
<211> 533
<212> DNA
<213> Homo sapien

<400> 1276
gacaatgatg tcactgtttg gagcccccag ggcaggattc atcaaattga atatgcaatg 60
gaagctgtta aacaaggttc agccacagtt ggtctgaaat caaaaactca tgcagttttg 120
gttgcattga aaagggcgca atcagagctt gcagctcatc agaaaaaaat tctccatgtt 180
gacaaccata ttggtatctc aattgcgggg cttactgctg atgctagact gttatgtaat 240
tttatgcgtc aggagtgttt ggattccaga tttgtattcg atagaccact gcctgtgtct 300
cgtcttgtat ctctaattgg aagcaagacc cagataccaa cacaacgata tggccggaga 360
ccatatggtg ttggtctcct tattgctggt tatgatgata tgggccctca cattttccaa 420
acctgtccat ctgctaacta ttttgactgc agagccatgt ccattggagc ccgttcccaa 480
tcagctcgta cttacttgga gagacatatg tctgaattta tggagtgtaa ttt 533

<210> 1277

<211> 78
<212> DNA
<213> Homo sapien

<400> 1277
ccacaggaag ttgcaaaaat tagatggact ctgtgtagct agccactctt gagtgtcagg 60
tctgcatatg tgagtttt 78

<210> 1278
<211> 560
<212> DNA
<213> Homo sapien

<400> 1278
aaatatctaa aacaatggcc cactgaagaa aggaacaatt aactctttaa ttaattcctt 60
aggataagta cccagaaatt taacagctag ggcagacttc taatacaata ccgaaagtcc 120
ttccaaaaac caagtggttg ccaacttatg tcccttagca ttataacatt cttgagccaa 180
tagtgtaaaa atacgctgac aattttatag gcaaacatta ctcaaggtat cttactttcc 240
acttattact aaagtaatta accccctaaat agatgctcct caacagtggg actacatcct 300
ggtaaaccta tcataagttg aaactatcaa gttgaaatgc atttagtacc cggataaacc 360
tatcataaag ttgaaaattt gtaaattgaa ccagtgtaaa tcagaggcca tcttacttca 420
tactcatgaa gcaactatag tgggatattt ttcaacttac gagatagcct aggcttgttg 480
aaacactgtc ctaatttact ggctctctgg taattaagtc ataaatggtc aaacatcaaa 540
ttctagaaaa gcatatattt 560

<210> 1279
<211> 580
<212> DNA
<213> Homo sapien

<400> 1279
aaaggagatt gtttcaaaat atttttgcaa attgagataa ggacagaaag attgagaaac 60
attgtatatt ttgcaaaaac aagatgtttg tagctgtttc agagagagta cggtatattt 120
atggtaattt tatccactag caaatcttga tttagtttga tagtgtgtgg aattttattt 180
tgaaggataa gaccatggga aaattgtggt aaagactgtt tgtacccttc atgaaataat 240
tctgaagttg ccatcagttt tactaatctt ctgtgaaatg catagatatg cgcatgttca 300
actttttatt gtggtcttat aattaaatgt aaaattgaaa attcatttgc tgtttcaaag 360
tgtgatatct ttcacaatag cctttttata gtcagtaatt cagaataatc aagttcatat 420
ggataaatgc atttttattt cctatttctt tagggagtgc tacaaatgtt tgtcacttaa 480
atttcaagtt tctgttttaa tagttaactg actatagatt gttttctatg ccatgtatgt 540
gccacttctg agagtagtaa atgactcttt gctacatttt 580

<210> 1280
<211> 307
<212> DNA
<213> Homo sapien

<400> 1280
aaacacatac gaagaaatca actgtgatta tgaagtggca gccagctaaa tatgtcttgt 60
atttgctctc ttcctttttt tgcctaactc atcctttact tccattcctg cttccatggt 120
aatgcaggct caaataaatt actaggatac aagattactt caagcctctt ttctgtggaa 180
ctcataatat gataagcatt tgttacaaga ttgcctgtag ttgtttaggg gataaattat 240
attagggaaa gaaagtcttt ctttagttgg ttaaattttc tattataatt gggtactaaa 300
tttattt 307

<210> 1281
<211> 235
<212> DNA
<213> Homo sapien

<400> 1281
aaaatatttt aatagttaca tagcacttta gtttgctgat ttaatttatc ccaagggaca 60
aggatgttaa tgagaaaact gactagattt cagatcacag attttaagag aacaaggatc 120
tcaaaaccaa ataccctctg cttaaagtgt tttttgtgtt tttcactact gaaaatgttt 180
agagattgac ttacctattg ctgatactca aaacatctga tatcttaata ttttt 235

<210> 1282
<211> 230
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(230)
<223> n = A,T,C or G

<400> 1282
aaagaatttc tttataagat tkactgtmta agattaatag cattcgaaga tccccagact 60
tcatagaata ctcagggaaa gcatttacct csgtcgctga ccackctarg ggcsawggcc 120
agcacactgg cggccgttac tagtggatcc gagctcggta ccaagcttgg cgtaatcatg 180
gtcatagctg attnctgtga ggtaccagat tgcctgtagt tgtttagggg 230

<210> 1283
<211> 638
<212> DNA
<213> Homo sapien

<400> 1283
aaacacaaca gctataaacc tgaacacata tgctatcatc atgccataag actaaaacaa 60
ttatatttag cgacaagtag aaaggattaa atagtcaaat acaagaatga aaaacgcagt 120
acatagtgtc gcgaactcaa atcggcattt agatagatcc agtggtttaa acggcacgtt 180
tttgcttata aaaaaagtgc aaaaaagatg tggtttacaa gttaaagcta cagaatccct 240
ttttgctgta attgcaccag ttttaaagcc tctggacaga gcagtatttc gtttaaaact 300
ttgttyttct taaaagctta cagtgtttgg ctaattctcc tcycctttt acaagacggg 360
ggccggaggg tggacactgg tggcaggtta agggatactg tcactttaag aagcctgcag 420
attgaagtgt aaacatggag aaattagggg ctgatttttt aaactgtgtg agatattaac 480
cagccgccct gttataaaat caggaaatcc aaacagcgat ttacaccgat taacaccccc 540
tttatatatt ttttacaaaa atacactgag aaaataatca aacgttttca tctctcttgt 600
cttttttttgt tttttaaaag tgtcaaaagt ctacattt 638

<210> 1284
<211> 745
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(745)

<223> n = A,T,C or G

<400> 1284
cgacggtatc gataagcttg atatcgaatt cctgcagccc gggggatcca ctagttttga 60
atttacacca agaacttctc aataaaagaa aatcatgaat gctccacaat ttcaacatac 120
cacaagagaa gttaatttct taacattgtg ttctatgatt atttgtaaga ccttcaccaa 180
gttctgatat cttttaaaga catagttcaa aattgctttt gaaaatctgt attcttgaaa 240
atatccttgt tgtgtattag gtttttaaat accagctaaa ggattacctc actgagtcat 300
cagtaccctc ctattcagct ccccaagatg atgtgttttt gcttacccta agagaggttt 360
tcttcttatt tttagataat tcaagtgctt agataaatta tgttttcttt aagtgtttat 420
ggtaaactct tttaaagaaa atttaatatg ttatagctga atctttttgg taactttaaa 480
tctttatcat agactctgta catatgttca aattagctgc ttgcctgatg tgtgtatcat 540
cggtgggatg acagaacaaa catatttatg atcatgaata atgtgctttg taaaaagatt 600
tcaagttatt aggaagcata ctctgttttt taatcatgta taatattcca tgatactttt 660
atagaacaat tctggcttca ggaaagtcta gaagcaatat ttcttcaaat aaaangggt 720
taaactttaa aaaaaaaaaa aaaaa 745

<210> 1285
<211> 190
<212> DNA
<213> Homo sapien

<400> 1285
cgacggtatc gataagcttg atatcgaatt cctgcagccc gggggatcca ctagttatta 60
atagtaatca attacggggt cattagttca tagcccatat atggagttcc gcgttacata 120
acttacggta aatggccgcc accgcggtgg agctccagct tttgttccct ttagtgaggg 180
ttaattgcgc 190

<210> 1286
<211> 153
<212> DNA
<213> Homo sapien

<400> 1286
ctgcatcttt ctacaattct accagcaata tatgagggtt acaatttctc yccatctttg 60
tgaacgcttg ttagagtctg tcctcttttc ttccattctg tgggttggct ttttactttc 120
taaatggtag aaccttcaaa gcacaaaggt ttt 153

<210> 1287
<211> 232
<212> DNA
<213> Homo sapien

<400> 1287
aaaaacacaa aacactagaa cagttgctat gaaattactg ataatgatcc ctttaataaa 60
ctgcaattaa ccactaatat agaaattcaa tttaagcaag aagttttata tattatactt 120
tacagaaaaa aataattttg aaaaagtaat gmcaaacaga gatcaaacat ttagggcatt 180
agttactgca ttctcttttt agaatataca ttaagtaaca ctagtaaaat tt 232

<210> 1288
<211> 90
<212> DNA
<213> Homo sapien

<400> 1288
aaacttagtg actatttagt tcaattgytc atccattttt tatttgcttt tataattgcc 60
tccttgtttt ggtatattgt aaaataattt 90

<210> 1289
<211> 670
<212> DNA
<213> Homo sapien

<400> 1289
aaatcacaaa gtaaggcacc attggattaa acatttctcc tggcttttac taagtaaaat 60
gcatagtgaa ataaatactg aacactgagt tttaatactg taatacattt caatataaaa 120
taagaggtga atgttaaaat actgtattac atgttgaata catttatctg aaaatgttat 180
aaaaaaacac acatgtaagc tctgatttca gggaagaaaa attcattttt gtaattttcc 240
atagtttaag attttaccac agaacttatt catagtttta gatgcaatta ggttgcaaac 300
tttcaaagaa agggtgtagg tgtattaatg aaacagtcac ttaaacacta cattctaaaa 360
caatctattc tggatgaatg gcaactttga gctatcaccc tgtttcagat ttagaacggt 420
acctgccaag ttcagatatg caaaggaatt gtccaattct tactacccct tataaaattc 480
agactcactt tctctgagtc agacttttct ccgtcatatt ttctaggaag ggcaaattcc 540
atcttttgtg aaatgggtca ttaggcttta tcatagggat gtttttcact gttgaaatca 600
gataaaagaa tcccaaataa atgatgctgc taaattacca aactgctaga gattaaaaaa 660
attttttttt 670

<210> 1290
<211> 352
<212> DNA
<213> Homo sapien

<400> 1290
aaacaatgct acacccattt ttggcaaagt gctgtattgt tcagtctgtg tacaaaactg 60
accatctatg aaccaatcag tataaaaaat ttctataaaa acaaaattta gacagtggct 120
caagaaaaca agctgccatt tatgcataga ttgatgtaca gtaacctaac caaatgtccc 180
ttttgaattt tcaagttact gaaaaaaaat gtgtcgagaa acacattaag aaggcacatg 240
tacagtctac aatactcttc agtctcccta actcatgccc tgcccctata aaggaaatat 300
gttcacaatt ttacttgaga aaaaaaaaca aagccactta aaaaaaaaaa aa 352

<210> 1291
<211> 99
<212> DNA
<213> Homo sapien

<400> 1291
aaaaattatt taaggtaatg gtgttacgaa tggtttaaaa atgtctggtg acttgcttat 60
ttttaagtga tcaccattaa gtcagaaaaa tgtatttttt 99

<210> 1292
<211> 295
<212> DNA
<213> Homo sapien

<400> 1292
aaatatacct ttatttctca aactcaaagc tttatcaagt tctaacacat tttgcattga 60
caagtgattt tatctgcatc aagtaaggtt agtgaccacc acgaaagagg aatccccaga 120
cctcctaggc actaagaaat atttcaaagg ctatgcaaat atagaacaaa aagctttcaa 180

tttagtctaa ttggtatcta tttttcatct atattaattt ggaaataagt tgctacctta 240
gaaaaattac atttttatcc attaaaataa aacaccagat aggttgagtt ttttt 295

<210> 1293
<211> 256
<212> DNA
<213> Homo sapien

<400> 1293
agattcactt caaagtgaaa atgacaacac atctcaagaa actcaaagaa tcatactgtc 60
aaagacaggg tgttccaatg aattcactca ggtttctctt tgagggtcag agaattgctg 120
ataatcatac tccaaaggaa ctgggaatgg aggaagaaga tgtgattgaa gtttatcagg 180
aacaaacggg gggtcattca acagtttaga tgttcttttt attttttttc ttttccctca 240
atcctttttt attttt 256

<210> 1294
<211> 90
<212> DNA
<213> Homo sapien

<400> 1294
aaaatactta gctttattaa agacatggta ctaaaaataa cagattccaa catttgctct 60
atttctactt atatatcata aataagacag 90

<210> 1295
<211> 519
<212> DNA
<213> Homo sapien

<400> 1295
ctgtcgcttt atcagtgcta tatttatctg gaatatagag gctcctttta ctgtttttaa 60
ggtgctttgt gctaaggatg aagatacaat tcctcagctc ttggtagact tttgggaagc 120
tcagctagtg gcatgtctcc cagatgtggt acttcaggaa ctctttttca aactcacatc 180
acagtacatc tggagattgt ctaagaggca gcctcctgac accacaccat tgcgaacatc 240
ggaggatctt attctcctgg tcattccttg gtagatattt ggaataaaat aatcacactg 300
actgtgattg ggtagatcac attccatatt ctcctgtgag tctcagaaga tgcttcattt 360
tgtagaacgg tgtaagtggt ttccattcca gcatgaatgt ggtcggtcac atggcagtgg 420
agtaaccaaa ttccaggtgt tcttggaaac atttctaggg tttggtatgt tccagggaaa 480
atgtcaaaga catcagaact ataaactccc ctgtgcttg 519

<210> 1296
<211> 419
<212> DNA
<213> Homo sapien

<400> 1296
aaagcaaaca gcagaaacca gaagcttctg accctctaac atgtattact gtccaaccca 60
ccatgagaag tatgttcact tggtgacaac aaagagactc cgtatcatat gtatgttaat 120
gaccagattg ttcatatggg atttttctta acagattatc aggttgagaa tgattctttt 180
tctccaaggg caagaaaaag ctggctaaat gctagttaat taaatccatt ctcaattttg 240
aactgtagag aagaacctga cttgaatgag attttctaaa ggaagacatt tcttgctcaa 300
cctcaggtat aattagatta taaggaatct cacgtccaga attttatctg ctgattgtta 360
gtatggtagg taattggcct taggacacta tttctactag aaccctttac attatttt 419

<210> 1297
<211> 199
<212> DNA
<213> Homo sapien

<400> 1297
caggtctgaa gattttacat gcagatacca gataccttaa cttgtatttc tttagtcatc 60
ttttggcttg gaagtttcct ctgttgtctt tgctgaatcc ttcgctttac ctccattctt 120
aggtgctttg gagctggaag cagccttctt gcacttatcc tttgctgtgt tctgtgaggt 180
ttctgtagtg gagggacag 199

<210> 1298
<211> 484
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(484)
<223> n = A,T,C or G

<400> 1298
aaatacactt gaaaagtaaa atgtttttct agcttttccc tcagggcgta acaccacacc 60
attcataaca atgctatttt ccaaaggttt caattagatt tcctcagaag catacctgaa 120
ctgttaatca ttacaactcc tttgtgaaac atgggactgg ttgattaccc agtgtaatca 180
ctggctgaaa cctcagcaca ctgtttttca ccccagtgga ggcaggtttt cacctcccct 240
ctagctgtac cctctcttta atgcccatat tagagaactg tgatcttctt tctccactag 300
aaatgttcac tttcatcagg taagggataa aacaaaaaca agagacagaa gatcttaaaa 360
aaaaaaatag taatagggca agtaaactca gtgaggttag aggaatttgt ttgggggca 420
ttctatgttg ttagytncat atcatgttca gtttgntggt tctaganccc tctgaaatgc 480
atta 484

<210> 1299
<211> 419
<212> DNA
<213> Homo sapien

<400> 1299
aaagtccatc tttgcaaatt atacgttgct ataaatacat tgtgtatttg gcattatgtg 60
aatttgttta atccagtgtc aattgtctaa tggtctaaag tgtcccattg aagttataat 120
ctggatgaac tgaacaataa gagaagtttt cttcattagc ccaattgttt atcactcaat 180
tcctactcct gcccatggtt tcttccacct tcctctggag aacataaaga gattctagat 240
ctctgtataa ggtggtttgc tttagcttga aatcatcagt gaggattata catgggcaat 300
gtccagaaat cacattattg ctcatagacc gtgtagtctt gatctaacgg ataactgtac 360
attgtcttca ctaagaagct agggtggttg tccttgatat tgggacattg tagacttgg 419

<210> 1300
<211> 182
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(182)

<223> n = A,T,C or G

<400> 1300
ccntngaatt gtgtgcatag ggaagcactc acccaatgag actttctcca atgtggactc 60
tgtgtgtcag ggaatgaatg tagaaaaatt cactttggag ggttatcakc tcaactagta 120
agaagcatta atattattaa agtgaagaaa ctgcagagaa aattacagaa caaaactgta 180
gg 182

<210> 1301
<211> 312
<212> DNA
<213> Homo sapien

<400> 1301
aaagttttta tctctgctga ggcttcacat ctgtttgctc aattttattt ttatttcaat 60
ccttgagcat gtttataata tagtagtatc cccttattgt ggctttactt tcctcacttt 120
cagtcaccca cagtcaaaaa atatgaaata taaaactcca gaagtaaaca gtttataaat 180
tttaagtcac actttgttct gaggaatgtg atgcaacctc ccgccattct gctgtatcca 240
gttcaggatg tgacataccc ctttgctcag cagatacaca attcctgctt cctgctcatt 300
agacatttgc ag 312

<210> 1302
<211> 109
<212> DNA
<213> Homo sapien

<400> 1302
attcttagat tatatgtgtc catctttgca gctttctgag agtaatttta tttgttgtct 60
tctgaaatgt acatgtatac atgtacctac tgagtgctat gtgatttttt 109

<210> 1303
<211> 330
<212> DNA
<213> Homo sapien

<400> 1303
ccagagttac ttggatcagc atttaggaaa gtaaaatata gtggaagtaa aactgactca 60
tccaactaga cattctacag aaagaaaaat gcattattga cgaactggct acagtaccat 120
gcctctcagc cagcccgtgt gtataatatg aagaccaaat gatagaactg tactgttttc 180
tgggccagtg agccagaaat tgattaaggc tttctttggt aggtaaatct agagtttata 240
cagtgtacat gtacatagta aagtattttt gattaacaat gtattttaat aacatatcta 300
aagtcatcat gaactggctt gtacattttt 330

<210> 1304
<211> 170
<212> DNA
<213> Homo sapien

<400> 1304
ccactgtagt ctgcatatcc ctgtccatat ccatagttcc catagttata cccagtataa 60
tcatatccgc catagccact atagttttga tcaccaccat aggcactatt gtaatttcca 120
tatccttgat cataatagtt attaaatcct tggttccagt tttggccctg 170

<210> 1305

<211> 468
<212> DNA
<213> Homo sapien

<400> 1305
aaaaataaat atttatactc cagcttttgt gtatttggtg tacatcacca cttatgcaaa 60
tcaaggatca gaaaactgga ggttagccat ctccattatt tccttttgca cattgggtac 120
agtgggtggc attagtatgc actagctgca aagtcacagc accttatgga aataagtatg 180
tttattataa taaaaaaaag ttaagctgca tctctgtaga ttatttactt tgcagactgt 240
aaagctgccc tatcttttcc agcagaattt actcttccat tcttaattct tttttgaaat 300
atcttaaata atttaacatt cctttataac ttcttaacag tgtcaaaact ggggtagaag 360
ggattttatt ttttcccaaa agggttccat ctttgctatc tgttgatcag ccttagaaaa 420
tctaagtatg atcaataaat tttaatggtt gatggcatcc tgtgtcag 468

<210> 1306
<211> 326
<212> DNA
<213> Homo sapien

<400> 1306
tggtaaagaa ctacctgtta atgcacaaaa ctatgtgcga tttattgaag atgagcttca 60
aattccagtt aagtggattg gtgttggtaa atccagagaa tctatgattc aactctttta 120
atgattgcca gtaatgcaag aaacactcct tgagagggag gggaaaagac tttcttaaat 180
atttcattta tgacctgcaa attcaagaat aaagacactg aagtaagttt gaagccctac 240
agytgtttcc agtcttttca gatggatgcc tactgtggag attaactttg gcatattcca 300
gtgtcagctt tctttagctg gaattg 326

<210> 1307
<211> 614
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(614)
<223> n = A,T,C or G

<400> 1307
aaaaattatt actgtaagaa atagttttat aaaaaattat atttttattc agtaatttaa 60
ttttgtaaat gccaaatgaa aaacgttttt tgctgctatg gtcttagcct gtagacatgc 120
tgctagtatc agaggggcag tagagcttgg acagaaagaa aagaaacttg gtgttaggta 180
attgactatg cactagtact tcagactttt taattttata tatatataca ttttttttcc 240
ttctgcaata catttgaaaa cttgtttggg agactctgca ttttttattg cggntttttt 300
gttattgttg gtttatacaa gcatgcgttg cacttctttt ttgggagatg cgygtytgyt 360
gatgttctat gttttgtttt gagtgtaggc tgactgtttt ataatttggg gagttctgca 420
tttgatccgc atcccctgtg gnttctaaag gggatggncc tcagnaactg ttgcatggat 480
cctgtgtttg caactgggga ggacagaaac tgggggtgat agccagtcct gccttaagaa 540
catttgatgc aaagaatggg accctgcccc ggggccgggn cccctccgaa angggggggа 600
aaatcccang cacc 614

<210> 1308
<211> 304
<212> DNA
<213> Homo sapien

<400> 1308
ctgtcttttg gaggacgtac gtaataaggt tttaatttag taaaccaatc ctatgcatag 60
tttcagcact agccaaacct caccaactcc tagttctaga aaaacaggca cttggcagcc 120
ttgtgatgtc atacagagaa gtcacaggca gtacctgagg gtctgtaggt tgcacacttt 180
ggtaccagat aacttttttt ttctttataa gaaagcctga gtactccaca ctgcacaata 240
actcctccca gggttttaac tttgttttat tttcaaaacc aggtccaatg agctttctga 300
gcag 304

<210> 1309
<211> 289
<212> DNA
<213> Homo sapien

<400> 1309
gggatttcca attaacagta ttaccagata aatattcttg gtccaagcag aaaatatcaa 60
caaaaagagc cttcttctcc tgtaaatctt aaatgcctac atcactcttt atgatacatg 120
gatcatctta tgtggatact taaatttttc atgtctgctt cttttgcctc tcccaactat 180
actatgagga aattcggaac aaagacattt ttgtaatatt tcttatctcc ttcacaccta 240
gtatagagct gattttacaa aggcatttaa gagatatttg aattgattt 289

<210> 1310
<211> 534
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(534)
<223> n = A,T,C or G

<400> 1310
tgctttgcat tttctgatgt attacatgac tgtttctttt gtaaagagaa tcaactaggt 60
atttaagact gataatttta caatttatat gcttcacata gcatgtcaac ttttgactaa 120
gaattttgtt ttactttttt aacatgtgtt aaacagagaa agggtccatg aaggaaagtg 180
tatgagttgc atttgtaaaa atgagacttt ttcagtggaa ctctaaacct tgtgatgact 240
actaacaaat gtaaaattat gagtgattaa gaaaacattg ctttgtggtt atcactttaa 300
gytttgacac ctagattata gtcttagtaa tagcatccac tggaaaaggt gaaaatgttt 360
tattcagcat ttaacttaca tttgtacttt agagtatttt tgtataaaat ccatagattt 420
attttacatt tagagtattt acactattga taaagtttgt aaataatttt ctaagacagn 480
ttttatatan gctacagggt gccctgattt tcttattgaa tttggttaga ctag 534

<210> 1311
<211> 114
<212> DNA
<213> Homo sapien

<400> 1311
aaaatttgta ggagttgtag actacctaaa tttttaagtt atggyatttg gtcataggtt 60
gactgggtag gtaaagaagg aaacagacaa gaaaatggct tcttgaggtg gcag 114

<210> 1312
<211> 95
<212> DNA

<213> Homo sapien

<400> 1312
gggcgggtaa aggtaggccg cgagagcgag gttaggagag gataggaggc cgcagtactg 60
ctcacacgct ccgctcttct cccactctcg actct 95

<210> 1313
<211> 519
<212> DNA
<213> Homo sapien

<400> 1313
aaatgataca gtattttagg tatgatttaa gactatgatt tacctataca ttatatatat 60
tttataaaga tactaaacca gcataccctt actctgccag agtagtgaag ctaattaaac 120
acgtttggtt tctgaataaa ttgaactaaa tccaaactat ttcctaaaat cacaggacat 180
taaggaccaa tagcatctgt gccagagatg tactgttatt agctgggaag accaattcta 240
acagcaaata acagtctgag actcctcata cctcagtggt tagaagcatg tctctcttga 300
gctacagtag aggggaaggg attgttgtgt agtcaagtca ccatgctgaa tgtacactga 360
ttcctttatg atgactgctt aactccccac tgcctgtccc agagaggctt tccaatgtag 420
ctcagtaatt cctgttactt tacagacagg aaagttccag aaactttaag aacaaactct 480
gaaagaccta tgagcaaatg ggctgaatac tttttttt 519

<210> 1314
<211> 518
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(518)
<223> n = A,T,C or G

<400> 1314
ccatggtggg tgaagacgct gatctgccct gtcacctggg gtttttttatg agtgcagaga 60
ccagggagct gaggaaaccc gagytccagc ctaaggcagg tggtgaacgt gtatgcagat 120
ggaaaggaag tggaagacag gcagagtgca ccgtatcgag ggagaacttc gattctgcgg 180
gatggcatca ctgcagggaa ggctgctctc cgaatacaca acgtcacagc ctctgacagt 240
ggaaagnact tgtgttattt ccaagatggn gacttctacg aaaaagccct ggtggagctg 300
aaggttgcag gtgagcctcc aggttttgnt ctgagaacac ttctctgtag gatctanagc 360
agatgcagag tccctcttcc aaaagtactg cagacactcc tggctgctca ctagcaatng 420
tctgcactgc ctcccaactn agcttctctg caacccttaa gaaagacaca ttctttcttt 480
agaaagaatt cctgctgnac cttacatgcc gaagtaaa 518

<210> 1315
<211> 360
<212> DNA
<213> Homo sapien

<400> 1315
tctgtgcatc caatttatta tagwtttgta agtaacaata tgtaatcaaa cttctaggtg 60
acttgagagt ggaacctcct atatcattat ttagcaccgt ttgtgacagt aaccatttca 120
gtgtattgtt tattatacca cttatatcaa cttatttttc accagkataa watcttratt 180
tytacgacct atcattctga atcaagmaca ctgtatgttc agtaggttga actatgaaca 240
ctgtcatcaa tgttcagttc aaaagcctga aagtttagat ctagaagctg gtaaaaatga 300

caatatcaat cacattaggg gaaccattgt tgtcttcact taatccattt agcactattt 360

<210> 1316
<211> 277
<212> DNA
<213> Homo sapien

<400> 1316
aaaaaacacg tttgttatta ccaaawagag acggctttag gtaaaaataa taaaaaccct 60
ttgcttgyat tacytatgca ratagttsta tttatctggw cwacgggyta aaggyacagy 120
actataggwc tctggcttga gtmtttacgt tcatttctta ttgctggaat ktcatatttc 180
ttcttgttgg atgactaaac cggatgatgg tagagatggt aagccggcat ttactcagcc 240
ccgccctgct cagcctcggg agcggacgaa ttctcag 277

<210> 1317
<211> 716
<212> DNA
<213> Homo sapien

<400> 1317
aaaatgttct cttgagacta gtaggcatag aagaaagcag aaggaaaata aatagaaaga 60
aggtcttcta ccttcatggc tattcaggct caggagggtg gagagaaaaa gaaggaggac 120
aaatgaacaa gacagatgag ggagacatcc tctctgatat aagatacagt cctctctggt 180
ggatggagtc caatttgtgt aacttcctat gtattttcct agataggacc accactattt 240
gagaaaatat ctcactggta acctaaagcc aaggataata aaccttgata tacttaacat 300
tcaatttctt tccagcaatg tgataaataa atctatcttg tgtttctctt gcagattgta 360
aaagcattag aacatttaca tagtaagctg tctgtcattc acagaggtaa gcatccatga 420
gctgccttgg ctgttccttt gataaagttc atctctttca cctggagtcc gtctctaccc 480
ccagtccccc atgggtggaa gtagaattga ctcaggcaag agaactaagg ggctttcctt 540
tgagattgga tagcaaacca tataagtagt attccttatc atggctgagg acataagaag 600
aagacgtgat ctttgtctta catccaaatt gaatataaac acttggtagc aagcagagct 660
atgagatcat atcattgaga attttagaga atatgataaa aattgatctt gtctgg 716

<210> 1318
<211> 515
<212> DNA
<213> Homo sapien

<400> 1318
aaagctgtat catgttgagt aaacctgacc tgagccagcg gtttaaggcg attttgctcg 60
atgaaggtca agacgtgaac ccggtcattg ccgacttggt aaggatacag cgcatctgca 120
aagtaaccgt cggcgaccct caccagcaga tttaccgttt ccgtggtgcc gaagacgctc 180
tcaacagcga ttggatggcc gatgcagagc gtcactacct gacccagagc tttcgcttcg 240
gtccagcagt cgcgcatgtg gctaacatca tacttttttta caagggtgaa actcgaaagc 300
tgcaagggtt aggccccaaa acccaggtta aacgtgcgct tcctgaagac ctaccgcatc 360
gcacatacat ccatcgcacg gttaccggcg tcatagagaa cgcgcttagc ttggtagcga 420
gcaatccaaa gatctattgg gtaggtggca tcgacagtta ttcattgcgc gacctggaag 480
acttgtatct gttcagccgc aaccaaaacc aagcc 515

<210> 1319
<211> 141
<212> DNA
<213> Homo sapien

<400> 1319
aaatttagtg tctcatttgg aaataaactc tgggcctatt agttgttgag tatttttttt 60
ttttactacc taaaaaaaga tttgttaaga gctgaattac aacttagcat tacataatat 120
aaaacactgt aatgtgtatt t 141

<210> 1320
<211> 497
<212> DNA
<213> Homo sapien

<400> 1320
aaattcagtc ctaagaaaga ggagtgcttg tcccctaagg gtgtttaatg gcaaggcagc 60
cctgtctgaa ggacacttcc tgcctaaggg agagtggtat ttgcagacta gaattctagt 120
gctgctgaag atgaatcaat gggaaatact actcctgtaa ttcctacctc cctgcaacca 180
actacaacca agctctctgc atctactccc aagtatgggg ttcaagagag taatgggttt 240
catatttctt atcaccacag taagttccta ctaggcaaaa tgagagggca gtgtttcctt 300
tttggtactt attactgcta agtatttccc agcacatgaa accttatttt ttcccaaagc 360
cagaaccaga tgagtaaagg agtaagaacc ttgcctgaac atccttcctt cccacccatc 420
gctgtgtgtt agttcccaac atcgaatgtg tacaacttaa gttggtcctt tacactcagg 480
ctttcactat ttcctttt 497

<210> 1321
<211> 344
<212> DNA
<213> Homo sapien

<400> 1321
ctgtccaatg acaacaggac cctcactcta ctcagtgtca caaggaatga tgtaggaccc 60
tatgagtgtg gaatccagaa cgaattaagt gttgaccaca gcgacccagt catcctgaat 120
gtcctctatg gcccagacga ccccaccatt tccccctcat acacctatta ccgtccaggg 180
gtgaacctca gcctctcctg ccatgcagcc tctaacccac ctgcacagta ttcttggctg 240
attgatggga acatccagca acacacacaa gagctcttta tctccaacat cactgagaag 300
aacagcggac tctatacctg ccaggccaat aactcagcca gtgg 344

<210> 1322
<211> 110
<212> DNA
<213> Homo sapien

<400> 1322
ccaccacata gccagccagg aatcccttga ggaacgggga ggacaacagc gagccacccct 60
ggcccactcc actgttgact tcgtcttcta cacgccgctg caggctttcc 110

<210> 1323
<211> 359
<212> DNA
<213> Homo sapien

<400> 1323
ccacgctgct ggcctgggct ggcgtctcct gctgtgagct ggctgaggag gacttcctgg 60
cggtctcccc cttagatccg cgctatcgtg aggtccacta tgtcctgctg gatccttcct 120
gcagtggctc gggtgagatg gtgagaaggc gtggctgagg gactcagagg tccacagcag 180
cttagacctg gagtcatctg ttttggtctt agttctgaca ctttaatggg cttgggaccc 240
tggagcaaaa gttctcctct gtgaagcgag gatttcagga gcgaggattt caggactgag 300

gcagcctgtg aagctgtgta accgagacac gcttttcctt aggtatgccg agcagacag 359

<210> 1324
<211> 258
<212> DNA
<213> Homo sapien

<400> 1324
caatcacaca accacaaaaa agatactgtg tgctctcact ttccaaaatt ctgcctggtc 60
tmctcctgag gaaagyagtg atatggtagc tggtgtggat cccctaaagg aattataaga 120
tggartgyga rgaacattat cttagactat aakactgkct gcatrcrgat atgktstcra 180
agattattcc tgctgcraat aaagakmttg skaaagagca rtatasagct atcacagtct 240
attgacccam asatgttt 258

<210> 1325
<211> 534
<212> DNA
<213> Homo sapien

<400> 1325
ctgtccaatg gcaacaggac cctcactcta ttcaatgtca caagaaatga cacagcaagc 60
tacaaatgtg aaacccagaa cccagtgagt gccaggcgca gtgattcagt catcctgaat 120
gtcctctatg gcccggatgc ccccaccatt tcccctctaa acacatctta cagatcaggg 180
gaaaatctga acctctcctg ccacgcagcc tctaacccac ctgcacagta ctcttggttt 240
gtcaatggga ctttccagca atccacccaa gagctcttta tccccaacat cactgtgaat 300
aatagtggat cctatacgtg ccaagcccat aactcagaca ctggcctcaa taggaccaca 360
gtcacgacga tcacagtcta tgcagagcca cccaaaccct tcatcaccag caacaactcc 420
aaccccgtgg aggatgagga tgctgtagcc ttaacctgtg aacctgagat tcagaacaca 480
acctacctgt ggtgggtaaa taatcagagc ctcccggtca gtcccaggct gcag 534

<210> 1326
<211> 177
<212> DNA
<213> Homo sapien

<400> 1326
ctgcattatg tgtgtttaga acgagaagtt gtttgtacag tatttttcta ttgaccgctt 60
ccgtcttgcc tgaaacctgg gcattctttc caatagacag aaaatcagag agtcaaatct 120
gatgcgcaat gagttgttct gagaccagta atccacggtg ctgcaatttg ggttttt 177

<210> 1327
<211> 266
<212> DNA
<213> Homo sapien

<400> 1327
aaacttgttt tatctaatac tgagcactgt ttttttgtca agtatttttt taagaccaca 60
taattctttt tgtctgctca aggaaaggat agataaataa ttggcacaca tttgtttctc 120
actgaatttt acagtagtaa attaatgtta taatgtacca catggagatg agttggtaag 180
aaatcatcta gttccagagc ccagggatta taaacagtag gtgaaataga tttatgactt 240
acgaaatatg ttgtgacaat atattt 266

<210> 1328
<211> 409

<212> DNA
<213> Homo sapien

<400> 1328
ctgtccaatg gcaacaggac cctcactcta ttcaatgtca caagaaatga cgcaagagcc 60
tatgtatgtg gaatccagaa ctcagtgagt gcaaaccgca gtgacccagt caccctggat 120
gtcctctatg ggccggacac ccccatcatt tcccccccag actcgtctta cctttcggga 180
gcgaacctca acctctcctg ccactcggcc tctaacccat ccccgcagta ttcttggcgt 240
atcaatggga taccgcagca acacacacaa gttctcttta tcgccaaaat cacgccaaat 300
aataacggga cctatgcctg ttttgtctct aacttggcta ctggccgcaa taatcccata 360
gtcaagagca tcacagtctc tgcatctgga acttctcctg gtctctcag 409

<210> 1329
<211> 136
<212> DNA
<213> Homo sapien

<400> 1329
ccattttcgc acagtccacc ataaaattga aaagattgac cagagacaga tcatggaggg 60
cttggcaatc tgtactgatg aagccatgga ccagaagaga agtgagtcaa tgaagagagt 120
ttctcttttc acatgg 136

<210> 1330
<211> 311
<212> DNA
<213> Homo sapien

<400> 1330
ctgctaacag ccctaacggt gcaacacaag tacaaactca ggaacctctt cgactgccac 60
gcccttcacc aacagaagga agacagtggc gccaccacaa gtggcagggc acaggggctt 120
ctgtgacaac aatatgtcct tctagtatac attcattgca aaggctgccc tgaagtttcg 180
tttttggaaa taactgttat catacatttt gtatgatgtt gcttgtgggc accatgaaga 240
gagcctggct gtaaaggaca gagggagcta aaccaacaat gcatggccct gcgtgcccac 300
aagagggagc c 311

<210> 1331
<211> 613
<212> DNA
<213> Homo sapien

<400> 1331
ctgggccakg agctgtgccc ggtgcctgca gccttcataa gcacacacgt ccattcccta 60
ctaaggccca gacctcctgg tatctgcccc gggctccctc atcccacctc catccggagt 120
tgcccaagat gcatgtccag cataggcagg attgctcggt ggtgagaagg ttaggtccgg 180
ctcagactga ataagaagag ataaaatttg ccttaaaact tacctggcag tggctttgct 240
gcacggtctg aaaccacctg ttcccaccct cttgaccgaa atttccttgt gacacagaga 300
agggcaaagg tctgagccca gagttgacgg agggagtatt tcagggttca cttcaggggc 360
tcccaaagcg acaagatcgt tagggagaga ggcccagggt ggggactggg aatttaagga 420
gagctgggaa cggatccctt aggttcagga agcttctgtg caagctgcga ggatggcttg 480
ggccgaaggg ttgctctgcc cgccgcgcta gctgtgagct gagcaaagcc ctgggctcac 540
agcaccccaa aagcctgtgg cttcagtcct gcgtctgcac cacacaatca aaaggatcgt 600
tttgttttgt ttt 613

<210> 1332

<211> 591
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(591)
<223> n = A,T,C or G

<400> 1332
ctgagttaan atggtaaagc caatattatt ttaggaggaa agaggacgaa ggccaatgaa 60
ccaacatctg cctgctatct ggtgcatcac ccaaggtgac caatggctgg gcacaaataa 120
acttctcttt tgctagccac agagttgctc actgtggcaa gcctgagctg gtcagaacac 180
ctgtgtgtgt gttcctgata cacactaacc acaataagca agtctgcaca catctctatg 240
agccccatgc aaagacaaga cattcccaaa gatcagtcac tagagtgcaa caacgaaatt 300
caagatttga ccaaaacaga ccctgctgcc tcctaaattg ccaattgcct ctcaaaaact 360
tacagaaaaa gggacattat aagaattcat agagggagag aagaaaaagc tgctactcct 420
agtcattagt acaatgtgct gtgttaatta gatacctcta tataaattag aaaaagtgct 480
ttacttgcat gcttcaataa aatgaatact gagtgtcgta gtgttagatc tgtacagata 540
taaatttttt gcagctatat aaaagtgtat aagatgggct tttgcatttt a 591

<210> 1333
<211> 379
<212> DNA
<213> Homo sapien

<400> 1333
ctggtacaaa ggcgaaagag tggatggcaa cagtctaatt gtaggatatg taataggaac 60
tcaacaagct accccagggc ccgcatgcag tggtcgagag acaatatacc ccaatgcatc 120
cctgctgatc cagaacgtca cccagaatga cacaggattc tataccctac aagtcataaa 180
gtcagatctt gtgaatgaag aagcaaccgg acagttccat gtataccogg agctgcccaa 240
gccctccatc tccagcaaca actccaaccc cgtggaggac aaggatgctg tggccttcac 300
ctgtgaacct gaggctcaga acacaaccta cctgtggtgg gtaaatggtc agagcctccc 360
agtcagtccc aggctgcag 379

<210> 1334
<211> 384
<212> DNA
<213> Homo sapien

<400> 1334
aaaccatttg tacaaaactt ctataaattt ttctctctct ttctctctta tgtacaaaaa 60
tatcttaata tatccccgaa ctggttagga tagatacaaa tagatttttt ataataaaaa 120
attcacaaaa gattggaagc attctataat gaaaatggta gaaaagacag tgtgagggaa 180
gccatggggt ttgggaatcg ggccctggag gagaagcaga gtttcaaagg gctgagaata 240
gcatagtttc actgtaaacc aatgtctaca gcttattggg gtgggggcta ctgagacgaa 300
agacaccaac tcgtttctag agggctaaga actgcacttt aagaaagggc ggggaggtga 360
agggacccga gcaagaactt tcag 384

<210> 1335
<211> 555
<212> DNA
<213> Homo sapien

<400> 1335
aaattagttg ctataaattc atcaatactt tttttcccta ttatattttt ggttctatta 60
ggatttactt aactgaatct tataacaatt cgaggtgaac tgtggcaatg aaaaccagaa 120
acagttaatg agatgcttca gctcacagtt tgaagtgctg agaacctaag tattttgctg 180
tacggtactg agctgtacca aaatatgatg gtttaggttt atgtgcaaga ctttgtgttg 240
tagtctagac aaaggggtgg gcaagagaca tgcaaagctg aagccctgct tgaaaagacc 300
cttcaaggaa gtaaaatggc aggggcagag tgcagcttaa catgttgcta tccctgttgt 360
ttttgagttg gttttggaat ggattcaagt tcttacacaa tttattttga atacaagcat 420
aatctaggtg atttgagtta atgaacttct tttcatgatg tagggaaagc tgaatgtata 480
tatttctaag aagaatttgt ttagcagatt acaagttggc aaaatagact gttcacagaa 540
actaggcaaa aattt 555

<210> 1336
<211> 505
<212> DNA
<213> Homo sapien

<400> 1336
cctggaaaga agcccagcaa aaggttccag atgaagaaga aaatgaagag agtgacaacg 60
aaaaggaaac tgaaaagagt gactccgtaa cagattctgg accaaccttc aactatcttc 120
ttgatatgcc cctttggtat ttaaccaagg aaaagaaaga tgaactctgc aggctaagaa 180
atgaaaaaga acaagagctg gacacattaa aaagaaagag tccatcagat ttgtggaaag 240
aagacttggc tacatttatt gaagaattgg aggctgttga agccaaggaa aaacaagatg 300
aacaagtcgg acttcctggg aaagggggga aggccaaggg gaaaaaaaca caaatggctg 360
aagttttgcc ttctccgcgt ggtcaaagag tcattccacg aataaccata gaaatgaaag 420
cagaggcaga aargaaaaat aaaaagaaaa ttaagaatga aaatactgaa ggaagccctc 480
aagaagatgg tgtggaacta gaagg 505

<210> 1337
<211> 385
<212> DNA
<213> Homo sapien

<400> 1337
ctggtgctag tcagagctaa tgacagaatt tcagtttaat aaaaagaccc ccaactgagc 60
acaccatctt gaaaaaagta tacttatcaa acagctttca atcagttcaa gagagacacc 120
ttaattgggg agaggaagaa ttgcagagta gtttgtaatc atgccaattc cagatcaata 180
actgcatgtc tgttctttgg tagaaatagc ttttgcttta tattaagtaa tcacatatat 240
attctctcta tttggataag gaaaccttcg ctttatttga caatgtataa tgatatactc 300
ttctaattca cctctgtgtc ttcacaataa acatgagtaa aatttagaca agtgatggta 360
aaggtcaata taattattta ttttt 385

<210> 1338
<211> 350
<212> DNA
<213> Homo sapien

<400> 1338
aaaggtgata ttacacaaaa cctcgtcttt tgttcaactt tggatccatt ggcaattcaa 60
tggcctcaat ctccccaaac tcgccaaagt actccctgat cttttcctca gtggcttcag 120
gattcagacc cccaacgaag attttcttca ccgggtcctt cttcatagcc atggcctttt 180
tagggtcaat gacacggcca tccagcctgt gctccttctg gtctaggacc ttctccacac 240
tggctgcatc tttgaacagg ataaacccaa accctcttga ccgtccagtg ttgggatcca 300
tttttattgt acagtcaacg acctctccaa atttagtaaa atagtctttt 350

<210> 1339
<211> 443
<212> DNA
<213> Homo sapien

<400> 1339
ctgctcctct agtaataagt tcctggggat aatacattaa ccaacattgg ttgaaacata 60
cctgagtaat catatcagga tgcatgttaa gctgataaaa caataagatc ccaaaatgca 120
gtagctcaaa aaaagtagaa gttaatttat ctcctggggg acagctctgg ttctcaaatt 180
ttacaggctc agaatcacct gcagggcttg tgaaagtaca gattgctgcg ctccgccccc 240
agagtttctg atttagtagg tgttaggctg aaccaagaat ttgcctttct aacaagctcc 300
caagtgatgc tgatgacttg taggaatgga tttacttcta ggattagact tcagctcact 360
ctgtttgctg aactctttct aatatttctt aagttggtag actcyctgct ccaggttctc 420
aacgtgaagg aaggaacccc cag 443

<210> 1340
<211> 273
<212> DNA
<213> Homo sapien

<400> 1340
cctcaggaac aggtaggggc agcagaatag aatagcatcc atttcccaga gaaagactgc 60
ctttacatkt cccatgcttt tagcacaaag cagcgtctgg gccactgtta ccagaggtga 120
gtttatacat ttacaaaatg cttaaaatct ttgggaagca agaggaagct aaacagaagg 180
tcccatgtta actgaaggca aattcactca acctctctag taagggaccc atggcctac 240
agagtgttcc ctctacaatg tgcagagtgg aaa 273

<210> 1341
<211> 561
<212> DNA
<213> Homo sapien

<400> 1341
ccatgggccc ggtcacgaac aaaacgggcc tggacgcctc gcccctggcc gcagatacct 60
cctactacca gggggtgtac tcccggccca ttatgaactc ctcttaagaa gacgacggct 120
tcaggcccgg ctaactctgg caccccggat cgaggacaag tgagagagca agtgggggtc 180
gagactttgg ggagacggtg ttgcagagac gcaagggaga agaaatccat aacaccccca 240
ccccaacacc gccaagacag cagtcttcyt cacccgctgc agccgttccg tcccaaacag 300
agggccacac agataccccca cgttctatat aaggaggaaa acgggaaaga atataaagtt 360
aaaaaaaagc ctccggtttc cactactgtg tagactcctg cttcttcaag cacctgcaga 420
ttctgatttt tttgttgttg ttgttctcct ccattgctgt tgttgcaggg aagtcttact 480
taaaaaaaaa aaaaaatttt gtgagtgact cggtgtaaaa ccatgtagtt ttaacagaac 540
cagagggttg tactattgtt t 561

<210> 1342
<211> 159
<212> DNA
<213> Homo sapien

<400> 1342
aaagatggca aggcaataaa tgtgttcgta agtgccaacc gactaattca tcaaaccaac 60
ttaatacttc agaccttcaa aactgtggcc tgaaagttgt atatgttaag agatgtactt 120
ctcagtggca gtattgaact gcctttatct gtaaatttt 159

<210> 1343
<211> 76
<212> DNA
<213> Homo sapien

<400> 1343
aaaatgtaaa gccaatctat caccaaaaat ggcataaatg taaacacaag ctaattttat 60
aatccactgc tatttt 76

<210> 1344
<211> 726
<212> DNA
<213> Homo sapien

<400> 1344
caaaagcagc ctgaatacgc aactcacgcc aagagggcag cagctctcct gacatccatg 60
taagaaggct aacacctaaa ccacacgcag gcatcctgaa ctcagcagct ctgatccaag 120
gtactgagtg gagacaaagc actcggaggt ggcaagatgt tcagcaacca agtaagacac 180
actggcaagg catcccaccc aaaggtgaga agcacaaagc aggcttggag aaacaaacag 240
tcatgccagg tgcagccaga catcctgcta taagccctga ccctagtacc ccgagttcat 300
caagtgctct ggttttgtgt ccataaagca cagagggcac tgaccacccc aaaccagaat 360
cccaaggaat ccttatggat ggcatagggc ctcagaactg ctgcaggatc attttccttt 420
tcaggtcgtg gctgaacttg ttcatcctga agagctcact gtcataaaat gcagagaggt 480
tgtggatgtt gatctgacga gccttatcca ccaagtcctt mtcagggacc tcaatagtgt 540
cctgctgggc cccaaagcgg ttgcgctgat atgtcacstg ctctgccact aactgcttca 600
gtatgaagag caacagctca ttgttgtcac gccggaatga aaggtagcgg gcaaaagtct 660
tgcgcatgct gcgcatgacg ctgaacttct gtgtgtctat gaagstctcc akmatcayga 720
gratgg 726

<210> 1345
<211> 742
<212> DNA
<213> Homo sapien

<400> 1345
ccagagagcc ctgtcctgtg agggtggtta tcacagtggc agggttcaat tcagaagacc 60
ttgagggcag gctgatgttt cctgaatggg cccctggttg ttgcttgtcc ctgactctcc 120
atttccccat ctgagtggat ttggacctaa tagggcactg gagctggttc gaatcctgac 180
tggactactt ggcaacttta tgtctgggag caagttactt aacctcccca agcctgtgtc 240
tgtgaaatgc gggtaaatga atgtagatgt ttggcagcag ctactccttg ttgagctctc 300
acagtgaact ctcctgcctc tgccctcctt ccccgcctcc cctggtgcct agcgtcaggt 360
ctagccactt cctcctgggc ccctctccct tttctgtggc tggctgcctg cccgcctggc 420
gctggacctt tcatgtaacg ggaatcagca tgtatattct ggtctggtct gtttctacac 480
ttaattttgt ttccagtagt atttccctgt accggcagag ttcacaaaca catttgaaga 540
ggctttttct caggattctt aaccttccaa aggaagtccc atggatgggt ttctagaagt 600
ctataaatgc tctgaaattg tatttttctg tggaaaagca taacttttat ctgcttggtc 660
gtgctcaaaa aaagatcatg aatggaatga attgcattga attttatgcc attgggggct 720
taatactaaa aggatatgga ag 742

<210> 1346
<211> 573
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(573)
<223> n = A,T,C or G

<400> 1346
aaatgcattk ttaacttaca gtattttcaa cttacgatgt gtttatcasg aagtaacccc 60
atcataagca gaggagcatc tgtattgcgt aatttgactg gcacagttta ttaggttctg 120
ttcagtgwtt tccgtcaaca agatgtttat tgtgtgagta aacaagttaa gccctgtgac 180
aagctgaata agaatagtct ctcctcagca gcttatagta aacaagggta gtaatcctta 240
cattagtggc tagactatca aacgaaatat ataacatgta agaacactaa agacagaatt 300
actgtggcat agagatagtt agaattgctt cagcctaaga gatgaattag gtaatgcaag 360
gaggtgaata tgttggcctg caatatgaac aaggcagaga gctgggagag taagatgtaa 420
gttgctaagg agggatgtgt cttgagtttg gaaaccataa agggaaatca taggtaatgc 480
tagagtcact gatcttangg agccttgaat aacggtgatg actaagggaa tctttatttt 540
ggngggacta ttggaattaa attggccaga att 573

<210> 1347
<211> 333
<212> DNA
<213> Homo sapien

<400> 1347
cctggtttct ggtggcctct atgaatccca tgtagggtgc agaccgtact ccatccctcc 60
ctgtgagcac cacgtcaacg gctcccggcc cccatgcacg gggagggag atacccccaa 120
gtgtagcaag atctgtgagc ctggctacag cccgacctac aaacaggaca agcactacgg 180
atacaattcc tacagcgtct ccaatagcga gaaggacatc atggccgaga tctacaaaaa 240
cggccccgtg gagggagctt tctctgtgta ttcggacttc ctgctctaca agtcaggagt 300
gtaccaacac gtcaccggag agatgatggg tgg 333

<210> 1348
<211> 185
<212> DNA
<213> Homo sapien

<400> 1348
aaaaaagctt gcagcaagaa aatgccagtg tgcaactggg tgactaaaga ccaaagaaaa 60
acagttaaaa gggacagctt acttgctctc tgtctcaggt ttaacttctc acctgaaatc 120
tctcatagcc ctaattaaac acaaacaaaa gtctcttcca tagataggct acttctcagc 180
ttcag 185

<210> 1349
<211> 171
<212> DNA
<213> Homo sapien

<400> 1349
gcggcagcga ggggctcgga gaggtgctcg gattctcgta gctgtgccgg gacttaacca 60
ccaccatgtc gagcaaaaga acaaagacca agaccaagaa gcgccctcag cgtgcaacat 120
ccaatgtgtt tgctatgttt gaccagtcac agattcagga gttcaaagag g 171

<210> 1350
<211> 400

<212> DNA
<213> Homo sapien

<400> 1350
ttgtcatatc atatctatgt cacctgtgta ttctgagatt acacacatac ctgccaatat 60
acctgggaaa ggttatttta tcacagttac acttgagttc ttggcaggca ggactgagga 120
agagtaattt gaaagaagtt ttacatccta tttagaagaa atcactagta tttccttaaa 180
taacaggtta caatagaaag atactgcctg gaagttatcc tttcactttg gttcattttt 240
agtttttctt tatgatttac atagctgttt aattcatttg cttatagtac aatcctgcca 300
taaagtatta aagcacaaga tacctattat tccttcaaca tctgcatttt tcaagtttta 360
tactctacat ccacagtacg tcagcagttc ttgaatgttt 400

<210> 1351
<211> 309
<212> DNA
<213> Homo sapien

<400> 1351
ccaggaaagg gcagtcctga gggagaagac aggattcagg gcagtgctcc gaagctgtgt 60
gctcacctgg ttggctcatc aaacctggca accctgtggc ctgtctgccg gagctgactg 120
gatccactca tcaattcttc gtccccacta ctaagactgg gcatgttttg ctggtgtggt 180
ctctgcactt caggaatggt cacaacaggg ggtagccctc aaaagcactc ctttttctat 240
acctcttctc aaggccatgt aagttgccca tctctacctg gctgtggaca aaaggttatc 300
tgctcttgg 309

<210> 1352
<211> 268
<212> DNA
<213> Homo sapien

<400> 1352
ccacttcatc tgtgtgggaa cgtggtcagg ccgggtgctg gtgtttgaca tcccagcaaa 60
gggtcccaac attgtactga gcgaggagct ggctgggcac cagatgccaa tcacagacat 120
tgccaccgag cctgcccagg gacaggattg tgtggctgac atggtgacgg cagatgactc 180
aggcttgctg tgtgtctggc ggtcagggcc agaattcaca ttattgaccc gcattccagg 240
atttggagtt ccgtgcccct ctgtgcag 268

<210> 1353
<211> 620
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(620)
<223> n = A,T,C or G

<400> 1353
cctgagtaat tattccatca tagacaaact tgtgaatata gtggatgacc ttgtggagtg 60
cgtgaaagaa aactcatcta aggatctaaa aaaatcattc aagagcccag agcccaggct 120
ctttactcct gaagaattct ttagaatttt taatagatcc attgatgcct tcaaggactt 180
tgtagtggca tctgaaacta gtgattgtgt ggtttcttca acattaagtc ctgagaaaga 240
ttccagagtc agtgtcacaa aaccatttat gttacccccct gttgcagcca gctcccttag 300
gaatgacagc agtagcagta ataggaaggc caaaaatctc cctggagact ccagcctaca 360

ctgggcagcc atggcattgc cagcattgtt ttctcttata attggctttg cttttggagc 420
cttatactgg aagaagagac agccaagtct tacaagggca gttgaaaata tacaaattaa 480
tgaagaggat aatgagataa gtatgttgca agagaaagag agagagtttc aagaagtgta 540
attgnggctt gtatcaacac tgttactttc gtacattggc tgggaacagt catgtttgct 600
ttcataaatg aagcagcttt 620

<210> 1354
<211> 398
<212> DNA
<213> Homo sapien

<400> 1354
aaaggattat ttttatgcaa agtattctgt ttcagcaagt gcaaatttta ttctaagttt 60
cagagctcta tatttaattt aggtcaaatg ctttccaaaa agtaatctaa taaatccatt 120
ctagaaaaat atatctaaag tattgcttta gaatagttgt tccactttct gctgcagtat 180
tgctttgcca tcttctgctc tcagcaaagc tgatagtcta tgtcaattaa ataccctatg 240
ttatgtaaat agttatttta tcctgtggtg catgtttggg caaatatata tatagcctga 300
taaacaactt ctattaaatc aaatatgtac cacagtgtat gtgtcttttg caagcttcca 360
acagggatgt atcctgtatc attcattaaa catagttt 398

<210> 1355
<211> 371
<212> DNA
<213> Homo sapien

<400> 1355
ctggytcctc agtgggaact gagtcattac ctgctaaagg gtagaagagg agagagagag 60
gccagagcct ggggatgggg cagaaggtgc agcaggaagg aaggttagag tgagaaaaat 120
ttccaaataa ggggtgatgt gtgagtgctc agagggtgac tgaggacatc tccagcattt 180
ccattgagga gggaggaagg aggggccctt gggttctggg gcagatgccg gcagggtctg 240
gatgagatgc ccccaacctc aaccctggtc ctctgaaaac acttcaccca gtcacactga 300
ggagcccctc caggcccagg ggcccctcca ggtaggcgta tctcagctcc tctctggaag 360
gacccccaca g 371

<210> 1356
<211> 338
<212> DNA
<213> Homo sapien

<400> 1356
gcggcgcggg cggcggtaaa atgtcggttc caggacctta ccaggcggcc actgggcctt 60
cctcagcacc atccgcacct ccatcctatg aagagacagt ggctgttaac agttattacc 120
ccacacctcc agctcccatg cctgggccaa ctacggggct tgtgacgggg cctgatggga 180
agggcatgaa tcctccttcg tattataccc agccagcgcc catccccaat aacaatccaa 240
ttaccgtgca gacggtctac gtgcagcacc ccatcacctt tttggaccgc cctatccaaa 300
tgtgttgtcc ttcctgcaac aagatgatcg tgagtcag 338

<210> 1357
<211> 159
<212> DNA
<213> Homo sapien

<400> 1357
ctgggctgct gcctctggag tacttccccg cagctcctca ttgctcacat agtaggcaat 60

ggcgttgctc tcaaacacac agaatccatc atcaccctca aatgctggga ccttgccggc 120
aggaaatttg cggagaaatt caggggtgcg gttggtttg 159

<210> 1358
<211> 306
<212> DNA
<213> Homo sapien

<400> 1358
cctgtcagag tggcactggt agaagttcca ggaaccctga actgtaaggg ttcttcatca 60
gtgccaacag gatgacatga aatgatgtac tcagaagtgt cctggaatgg ggcccatgag 120
atggttgtct gagagagagc ttcttgtcct gtctttttcc ttccaatcag gggctcgctc 180
ttctgattat tcttcagggc aatgacataa attgtatatt cggttcccgg ttccaggcca 240
gtaatagtag cctctgtgac accagggcgg ggccgaggga ccacttctct gggaggagac 300
ccaggc 306

<210> 1359
<211> 382
<212> DNA
<213> Homo sapien

<400> 1359
agagggagtc cagcccccaa gccttgtgag gcactgttar gcagataggg aaaagagggg 60
tcccttagatc actggttcaa ggagggatct ggtaggggca gcatttcttc tgggctggaa 120
acagaatggg ggtttcaaga tggcagaacc attccattat tggagctata agcccctaga 180
attgctccat ggcctatctc ggtttccctt ggatctcatc tgctcctgaa ctgcacctgt 240
catggcaagt ccatctccgg cccccatctc ccctgagcca atgtgagtca ggtgaacaaa 300
attcattggt tccccaatca tggtccggtc aatccgtctt ctcttcttct ttcttctcca 360
ccatccagac gttcagctac ag 382

<210> 1360
<211> 365
<212> DNA
<213> Homo sapien

<400> 1360
aaaaaacctt tcaaaataaa acttagtaaa atctagaact gkttcttggc ctacttgaga 60
ggaacttcca tattttcaca gccatctccg aaagcagcag ttgctgtaaa ttaactgaga 120
cttggaaatg gtgcagactg tcttggtaga gctgttctta tagcacaatt ttatctggaa 180
aataaacttg taaatgcgtg ctgtatatta atacatgtgt gcccatattt atttttatta 240
tctcctgcca gtctttgctc aatgggagat gacagaccaa cttctcaacg tgatttcccc 300
atttcattga atgacattta tatgccactt atgaaaaaaa tactgctgtg aaagaaatgt 360
acttt 365

<210> 1361
<211> 502
<212> DNA
<213> Homo sapien

<400> 1361
gaggtatgga aaaatatcaa caaggaaata ttagatttga actgctgctt cgttagcaca 60
cagcacattc tccaggatat accatatgtt aggacacaaa acgggtctca ataaattttt 120
aaaagtcaaa atcttatcaa gtatcttctc agaccacaat ggaataaaac tggaaatcaa 180
taacaagagg aacttctgaa attgaacaga tacacggaaa tcaaactaca tgttcctgaa 240

tgaccactgt gtctatgaag aaattgattt taaaaattta aaaattcttt gaaacaaatg 300
aaaatagaaa cacagcatac aaaaatgtat agggtacaac aaaagaagtg ctatgaggga 360
catttatttc aataaacacc cacatcaata aggtagaaag tttttaaaca aataacctaa 420
taaacgcatc tcaaggaact agaaaagcaa gaacaaatca aacctaaaat tagaaggaaa 480
taaatagtaa agatcagagc ag 502

<210> 1362
<211> 545
<212> DNA
<213> Homo sapien

<400> 1362
ctgattggat gtctaggaat gactgaaaga aaccaaaaca gcctgtccac tgctgctgtg 60
ggatggagga ggcgtaagca gaaacactaa cagtatactg acctcttagc agaaccgctt 120
ccattctgga gatcacggct gctaaatcca gcatccccac ttcattttac ccccagcata 180
ttgttctgta gtcttttctt gaaacatctt gattgctttt cctcggcagc tttcaaaaaa 240
ccaaataata atagttatcc gtcttctact tcatggaaga ttgttttggt gccctgaccc 300
tctgaagtgc ccagttcctg ccatctgaaa cctcggcctg atctgatctc atgttggaat 360
ctgcctgtct ttcacacagg gctggtcttg gtcctttaca tgccagtttt gcttgtgaat 420
tcttgctttt ttcctctcat cagccttaag tttaggcgtt tgttgttctc cagtgatgta 480
gacagttccc ttcacaagtc acagttcttc ccataaatga ggcccgctga cctctgcggg 540
acttt 545

<210> 1363
<211> 286
<212> DNA
<213> Homo sapien

<400> 1363
gggagatgca ggatgtagac ctcgctgagg tgaagccttt ggtggagaaa ggggagacca 60
tcaccggcct cctgcaagag tttgatgtcc aggagcagga catcgagact ttacatggct 120
ctgttcacgt cacgctgtgt gggactccca agggaaaccg gcctgtcatc ctcacctacc 180
atgacatcgg catgaaccac aaaacctgct acaacccccct cttcaactac gaggacatgc 240
aggagatcac ccagcacttt gccgtctgcc acgtggacgc ccctgg 286

<210> 1364
<211> 503
<212> DNA
<213> Homo sapien

<400> 1364
ccatcaggat catgaaaaca aactttggtg aatgtgagca actgcgccag acaggacaca 60
ggttacaggg cctgacgtca ctaacggtaa ctgacaatct tggaatggac cctactgctg 120
atgtttcaaa aggacacaga ggtgaactgg tcacttctaa ttaagaagag ccagtggggt 180
gggggaagct gaaaaccaaa aatccacgta gacatacgtg gcagtgtgaa cgtctgtcct 240
ccccttcctt ctcctcactt cctctcctcc tcctcactca ggctggtatt ctcctggtgt 300
gcggatgtca gcttgccctg cagaagggct gccagttttt tagatgtctt tttgagaaac 360
gagctgcccg gatgggcact gttcacgtgc aggtacaggt cctcctgggt ggggcccgtg 420
tagccgcaat cctcgcagac gtagagcttg tcccgccgct gcttataggc atactgctgc 480
tgcaccccat ggattttctt cag 503

<210> 1365
<211> 245
<212> DNA

<213> Homo sapien

<400> 1365
ctgggcggct ccacgctcat ccagtgggcc taggttctga ctgaccagcg aacaaaaact 60
gtgacagaga tctaggattt cattcaggca gtgaaacacc tacccgggaa acagagttgg 120
cattaggaaa ggaaggaagg tacatccatg aagttaaagt gttaggagaa cagtctgatt 180
aatagctgat ctaattaata gctgacctcc caaatctgac aggatagaca ctgccacgtg 240
caagg 245

<210> 1366
<211> 131
<212> DNA
<213> Homo sapien

<400> 1366
aaaatcccca taaatctttt ctgtcctgag gtagttgcaa aataaatcat aacttggata 60
tcaactagag ctgaggcttt gactttttac tcattaaaac tagttgttac aggaactacc 120
tttagatatt t 131

<210> 1367
<211> 430
<212> DNA
<213> Homo sapien

<400> 1367
ctgtgcagtt atatgaccat aaaggaaatg aaccattaaa aatggatcta cagccatata 60
ttctgccgtt actcagaggc ttaatgattt attttccccc tccagccctg cctttaccag 120
gttaaatgac agaagacctt ctattgtacc tattgttcaa aaaatattac tgttctgtgg 180
aacctgggag agtccaattg ataagagaaa ctgaatcata ctgatgaggt gaaggatagg 240
tctgccggtg tggggcaggg cactctttct cagcagccaa gataacttat cacacacgaa 300
gcagagagaa tgcacccgat gaaaatctct ctgaactgtg ttccttgaag gatctcttaa 360
aaaaaaaaaa tctgaaacat catccattga acaaatgaaa ggcttatacc tttaccatga 420
agaaacattt 430

<210> 1368
<211> 294
<212> DNA
<213> Homo sapien

<400> 1368
ctgggcggat agcaccgggc atattttgga atggatgagg tctggcaccc tgagcagtcc 60
agcgaggact tggtcttagt tgagcaattt ggctaggagg atagtatgca gcacggttct 120
gagtctgtgg gatagctgcc atgaagtaac ctgaaggagg tgctggctgg taggggttga 180
ttacagggtt gggaacagct cgtacacttg ccattctctg catatactgg ttagtgaggt 240
gagcctggcg ctcttctttg cgctgagcta aagctacata caatggcttt gtgg 294

<210> 1369
<211> 429
<212> DNA
<213> Homo sapien

<400> 1369
ctgaaggcaa tgggggactg aggaaggagg cagcagaagt aggagaggag caagaatcca 60
gaagggaaat gagaacgaca aaactgaagt gcacttcaac atcctgcagc caaaggggta 120

aaaaggagaa agaagtgcag accagtcaca taaatgccac agtgacatgc acaaaaacgt 180
gaggggcaca ctccagggac agagtctgac aacatgacaa gctacatggc atcaaactct 240
ttcatgtgac aggcagcttt tcacatgtgc atcttaagac tggaacttgc tatagataaa 300
ccttaagtag ttaataaaag caaaagtcat cctctattca ctgtttgctg ccatgttcca 360
ggcatagtac ttggcacttt ttattttatt tcacttgatc agctcagaaa gtcctccaaa 420
tgagtattt 429

<210> 1370
<211> 540
<212> DNA
<213> Homo sapien

<400> 1370
ccactcccag gatgctgggt ctcgcttgct ggctgggacc ccggagccgt cagtccacgc 60
actcccggat gcactcaaca acctaaggac gcaggagggt tccggggatg gtccgagctc 120
gtccgtagat tggaatcgcc ctgaagatgt agaccctcaa gggatttatg tcatatctgc 180
tccttccatc tacgctcggg aggtagcgac gcccctttc cccccgctac acactgggcg 240
cgctgggcag aggcagcacc tgctttttcc ctacccttcc tcgattctgt ccgtgaaatg 300
aattgggtag agtctctgga aggttttaag cccattttca gttctaactt actttcatcc 360
tattttgcat ccctcttatc gttttgagct acctgccatc ttctctttga aaaacctatg 420
ggcttgagga ggtcacgatg ccgactccgc cagagctttt ccactgattg tactcagcgg 480
ggaggcaggg gaggcagagg ggcagcctct ctaatgcttc ctactcattt tgtttctagg 540

<210> 1371
<211> 142
<212> DNA
<213> Homo sapien

<400> 1371
ttaaaatggt agcacaagag tctggcaagt tggtactgca gagaaaaggg gttaattgag 60
gcttgtttgg agtcgggatt ccccttcccc aaacatgcgt ctcgccactt ggacagcagc 120
catttgtact cgtatacttt tt 142

<210> 1372
<211> 377
<212> DNA
<213> Homo sapien

<400> 1372
ccaccatctg tgcaagtagc caaaaccact ccttttaaca cgagggagcc tgtgatgctg 60
gcctgctatg tgtggggctt ctatccagca gaagtgacta tcacgtggag gaagaacggg 120
aagcttgtca tgcctcacag cagtgcgcac aagactgccc agcccaatgg agactggaca 180
taccagaccc tctcccattt agccttaacc ccctcttacg gggacactta cacctgtgtg 240
gtagagcaca ttggggctcc tgagcccatc cttcgggact ggacacctgg gctgtccccc 300
atgcagaccc tgaaggtttc tgtgtctgca gtgactctgg gcctgggcct catcatcttc 360
tctcttggtg tgatcag 377

<210> 1373
<211> 504
<212> DNA
<213> Homo sapien

<400> 1373
ccatgctaag tttgggaacc gctggtgatg ggacatggat gcttgcaacc gaccgtgggc 60

ggatgtggtt gaccagatgg cagaggacga caccatccat gagggctgcc cccaggtctt 120
cgtgcagact gaccttcaat ctcatctcaa tgctctcacg aagttgttcc accagctctt 180
tctcttctct catctgctcc attttcctcc ggattgtaaa ctgcgggtct atagattcca 240
aatttctctg aggtcttaga aacacagact cagaaatcaa atgaggatgt ctcagaaagg 300
agtcactttt ccagaggcag gctgcccctt aactcagccg agcagcagga accactgggg 360
ccaaagctat tttatcttcc ttaggtaaaa aaaaatcaat agaatatttc ttccccgctt 420
acatgctccc accactgatg aacgcgatct tcagcaagaa gaactttgag tccctctccg 480
aagccttcag cgtggcctct gcag 504

<210> 1374
<211> 201
<212> DNA
<213> Homo sapien

<400> 1374
cctccgtaag atgcttgaca attttgactg ttttggagac aaactgtcag atgagtccat 60
cttcagtgct tttttgtcag ttgtgggcaa gctgcgacgt ggggccaagc ctgagggcaa 120
ggctataata gatgaatttg agcagaagct tcgggcctgt cataccagag gtttggatgg 180
aatcaaggag cttgagattg g 201

<210> 1375
<211> 295
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(295)
<223> n = A,T,C or G

<400> 1375
ctgtgaggct gnttccaagg aggaaaacaa ggaaaaaaat cgatatgtaa acatcttgcc 60
ttatgaccac tctagagtcc acctgacacc ggttgaaggg gttccagatt ctgattacat 120
caatgcttca ttcatcaacg gctaccaaga aaagaacaaa ttcattgctg cacaaggacc 180
aaaagaagaa acggtgaatg atttctggcg gatgatctgg gaacaaaaca cagccaccat 240
cgtcatggtt accaacctga aggagagaaa ggagtgcaag tgcgcccagt actgg 295

<210> 1376
<211> 318
<212> DNA
<213> Homo sapien

<400> 1376
ccagcgctac tgtactggcc cagggcagag ttcatgtatc tcgtcttgac cacgtctaca 60
ggggaggcga tgacagtggt gcagaagcct gccccaaagg cagaagtgaa gtggcaaggg 120
aggtcatctg tcatgaggtt ggctttcagg agggcatcct tgatgaggtc ataggtcacc 180
agctcagcac agttgacaat ggcattacga gcaacattgg gggaggtccc tttccagagg 240
ccccggaacc cttcctctcg ggcaatggtc ttgtaggcat tgacggtgct ttggtatctc 300
cgaccacctc cagcccgg 318

<210> 1377
<211> 143
<212> DNA
<213> Homo sapien

<400> 1377
gtggattccg ytccgggcac cgatctcgcc aagatcctga gtgacatgcg aagccaatat 60
gaggtcatgg ccgagcagaa ccggaaggat gctgaagcct ggttcaccag ccggactgaa 120
gaattgaacc gggaggtcgc tgg 143

<210> 1378
<211> 98
<212> DNA
<213> Homo sapien

<400> 1378
aaatattggt aataggtcgg caacagcaac tatagaagta caactcaata gatggcatta 60
aaacatattg tagtgtggat atatattttt tctttttt 98

<210> 1379
<211> 330
<212> DNA
<213> Homo sapien

<400> 1379
aaagatgttc acgttacgct ggaccaaatt aagacggctt tctccctctt gctgacgtgc 60
cccagccgtg ataatgacca gcttggagtt tgcagttaca ttatagtctt tgccagagac 120
aatctttggt gttctaagga aaaggctgcc atgttggaga tccatcatct ctcccttcaa 180
tttgtcttcg acgacatcaa caagagcaag ttcatctgcc aagtccttca ttaagatact 240
gatggcacag gccatgccaa cagcaccaac cccaacaact gtaatcttat tctggggggt 300
ctgttcttcc tttagaagat tataaatcag 330

<210> 1380
<211> 269
<212> DNA
<213> Homo sapien

<400> 1380
ccactcctgg aaacccactg atagatgagt ttcccccatt cttctggcct ccgccacatg 60
atcaggaagc tggacttgct cttatccaac cactcgaggt tccctttctt cctcagttcc 120
tctaatacaa tctggatcga ctccacagga agctttcgct gtagcttgac gttgttgaag 180
agcgggctct cctgagcttc catcaccgtc atgctggact gtttgtgcag gcggcagaag 240
gacaggacca gcgagcacca ggcggccag 269

<210> 1381
<211> 232
<212> DNA
<213> Homo sapien

<400> 1381
aaaagagagg aaaggcagtg cagggctgga ggtcctggag ggtggcggcg ggtcgtccta 60
actagcaggc tgaaaggtgc tggaggggat gccttcactc agaggaagtt cacagccacc 120
tgccttggaa catgtacctg ttcatctttt cgtaatgtta gtattcattt tgctatcttc 180
ctgttgccat ttccaaacag tgtcagtatg tttttgttaa atacgaacat tt 232

<210> 1382
<211> 348
<212> DNA

<213> Homo sapien

<400> 1382
aaacgtgcta aagggaaagg aatctgacat tctgggtaaa tcttactcaa tctaaatcaa 60
agcttggttt tcaggaggag gaaggtgcga gcgcaggcag aggtgctgaa tactcctctt 120
ctgattcact tccatcatcc tctttctctt ggtcactgcc ctcagtgcta agccggtcaa 180
acccttttcg actgtagccc ttacggcttg caaagaaatt accaaggttt aagcctccac 240
ttccctttcc tctaaatctt cccagtactc ttcctgaact cgtctcgagt ttgtgttcag 300
aatctccaaa ggcccttgat tttttccacc gaataaatat ggcaatgg 348

<210> 1383
<211> 293
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(293)
<223> n = A,T,C or G

<400> 1383
ctgcttcaan acctcagctt catgggactt gcgtctttct tctgcagctt ctaatttctt 60
ctgaatttcc tccagggaaa gatccttctt ctttggaggg gaaaggggga attctggaac 120
agattctttt gaccgagggc tgagaatcag ctcaaaagcc tggcccgagg cacgcttctc 180
cagttctttc acctggatat cagaagaagc catggtgaat agaagacaag cgacaggcag 240
tgtattctgc acaatcaact gggataagga aagtcctgct cagtccgagc cgc 293

<210> 1384
<211> 573
<212> DNA
<213> Homo sapien

<400> 1384
ctgaagcaac ttgggattaa ttgcttgatt agcttcacga agcacagaga taaggtcgct 60
cacttgcttt atgttattag gtgtaaagaa agtgtatgct gtgcctgttt tggtactgcg 120
agcagttctt ccaattcgat gaatataatc ctctgaggag ttagggtagt cataattgat 180
gacaaatttc acatcttcca catctagccc tctggaggcc acatctgtag caatcagaat 240
aggagctttt ccatgtttga attcatttag aacccagtca cgctcttgtt gactcttgtc 300
accatggata cccatggcag gccacccatc tctcctcatt tttctggtaa gctcatcaca 360
tcttcttttg gtttccacaa aaacaatggt tttattctcc ttctcactca tgatctcttc 420
cattagacga ataagttttt catccttttc tacgtcatga cacacatcca caatctgaag 480
aatgttgtgg tttgcactca gttcaagtgc accaatgttt atatgaatat agtctttcag 540
gaaatcttca gcaagctgtc ttacttcttt tgg 573

<210> 1385
<211> 150
<212> DNA
<213> Homo sapien

<400> 1385
ccaaggccgc tagggtcctt acccctcagg atcactcccc agccctttcc tcaggaggta 60
ccgctctcca aggtgtgcta gcagtgggcc ctgcccaact tcaggcagaa cagggaggcc 120
cagagattac agatcccctc ctgtaagtgg 150

<210> 1386
<211> 159
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(159)
<223> n = A,T,C or G

<400> 1386
aaatgatgtt ttggttaaga gtggaccatg agaattagct gacagcatcc cctttctctc 60
tccctgcctt ggtgggaccc tccctgtgtg accttggtca agtcctcgaa cttttgtccc 120
gtatttaaga tggagctgnt ttacctactt cataagaca 159

<210> 1387
<211> 735
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(735)
<223> n = A,T,C or G

<400> 1387
ggtgnaattc gcctttgaan ggccgccggg caggtccttt ntgtstgctg aaggcagatc 60
gcttgttcca caccagctac cactcccagg cagtgcatat ccgccctgtt tgcagaaatg 120
cacgctgtac tagcatctcc tgggagctga ggcagaccct gtcagttgta tttgatgcct 180
tcatcacggg gcagggaaag aaagactggt ccctcttccg gatgttctcc cgaaccctca 240
cggagccctg ccccctggct tcagagagcc gagtctatgt ggacatcacc acctacaacc 300
aggacaacga gacattagag gtgcacccac ccccgaccac tacatatcag gacgtcatcc 360
taggcactcg gaagacctat gccatctatg acttgcttga caccgccatg atcaacaact 420
ctcgaaacct caacatccag ctcaagtgga agagaccccc agagaatgag gcccccccag 480
tgccctttct gcatgcccag cggtacgtga gtggctatgg gctgcagaag gggagctga 540
gcacactgct gtacaacacc cacccatacc gggccttccc ggtgctgctg ctggacaccg 600
taccctggta tctgcggctg tatgtgcaca ccctcaccat cacctccaag ggcaaggaga 660
acaaaccaag ttacatccac taccagcctg cccaggaccg gctgcaaccc cacctcctgg 720
agatgctgat tcaga 735

<210> 1388
<211> 369
<212> DNA
<213> Homo sapien

<400> 1388
ctggggacag cctacagggg cctccagcct gtgccagacg aggaggtgat tgagctgtat 60
gggggtaccc agcacatccc actataccag atgagtggct tctatggcaa gggtccctcc 120
attaagcagt tcatggacat cttctcgcta ccggagatgg ctctgctgtc ctgtgtggtg 180
gactactttc tgggccacag cctggagttt gaccaagcac atctctacaa ggacgtgacg 240
gacgccatcc gagacgtgca tgtgaagggc ctcatgtacc agtggatcga gcaggacatg 300
gagaagtaca tcctgagagg ggatgagacg tttgctgtcc tgagccgcct ggtggcccat 360
gggaaacag 369

<210> 1389
<211> 322
<212> DNA
<213> Homo sapien

<400> 1389
aaagatgttt ctggcatttt ctttttattt gtaaggtggt ggtaactatg gttattggct 60
agaaatcctg agttttcaac tgtatatatc tatagtttgt aaaaagaaca aaacaaccga 120
gacaaaccct tgatgctcct tgctcggcgt tgaggctgtg gggaagatgc cttttgggag 180
aggctgtagc tcagggcgtg cactgtgagg ctggacctgt tgactctgca gggggcatcc 240
atttagcttc aggttgtctt gtttctgtat atagtgacat agcattctgc cgccatctta 300
gctgtggaca aagggggtc ag 322

<210> 1390
<211> 450
<212> DNA
<213> Homo sapien

<400> 1390
aaatattagw tgagacttta caggcacata actgttcaga tagaaacaaa cataacagac 60
taaaatactt tcaaaattaa agccatctag aaaatggaag taactgaaac tgtagccatt 120
acaattcttt ttctggtttt gagcaaaaat tttatctctc tggcaaaaca cctttgtctg 180
atcatttgag agacagggtt cttgtatact gtttcttcaa cgtaaacctc atttacaaaa 240
atagtgacat agcattatga ataaactatg aattggggac catggaaatg cactagaaca 300
aattttgtaa aaatatggca gatatggaag ttaaaaatag aatggatgca aggactgtac 360
taaaggtgtt tggtgtagtt acaatgttca ctttgcacaa ctatccctat agtctaggta 420
gccattgggt ttctcctcag cagtgtcaga 450

<210> 1391
<211> 304
<212> DNA
<213> Homo sapien

<400> 1391
aaaaaatcat aaatggggtt tcataatcca aagttgaaac atttattctt catagcttca 60
gaatttaaca accaattgta gaccatgctt tccaaatcca gtcttctttg ctatttttca 120
aaacttctga gatctagtat taaactgctc cattctaaat gtatagtttt agataagtat 180
tgtacacttg ttgataaggg ttttctgaaa gcagtctatc aaatataaag aatggtttct 240
atctaagaat cagcagtgag ggaagaaata ttaaacacct atcaagaaat caattattca 300
tttt 304

<210> 1392
<211> 140
<212> DNA
<213> Homo sapien

<400> 1392
ctggaagaag aactgagaca gcagaaagaa gcagcttgtt tcaaggctcg tccaaacacc 60
gtcatctctc aggagccctt tgttcccaag aaagagaaga aatcagttgc tgagggcctt 120
tctggttctc tagttcagga 140

<210> 1393
<211> 166
<212> DNA

<213> Homo sapien

<400> 1393
aaaactttgt ttttcttaaa agcttacagt gtttggctaa ttctcctccc ctttttacaa 60
gacgggggcc ggagggtgga cactggtggc aggttaaggg atactgtcac tttaagaagc 120
ctgcagattg aagtgtaaac atggagaaat taggggctga tttttt 166

<210> 1394
<211> 543
<212> DNA
<213> Homo sapien

<400> 1394
gcagaggctg tggtacaaca tggtccttgg tgaagacctg caccccctgga acctcccacc 60
atcatcacaa ctgtagtctc atttgcagtg gagaaaagaa cccgacgtcc cacagccaga 120
tatacaccca gctccatgcc agcccttcat gtttaccttt tgctttgtta attacatgtc 180
agactcctag agggcctcca gactaatagg aagcatttct gtaaccaacc tgccacccac 240
tgattcagaa atggaaatca cattccacaa tctatggctt ctaccagcta gcccaggaaa 300
tacttgaaat cagcattcca attagtgttg agtctcttga ttgtgtcatt taccaattaa 360
ataactgaga cctaagtctg ggaacagagc cacgaatctg cctttgagat gctggcagat 420
ctcaaggcca tcaattattg gggagggag ggacaaacac tcccaatcat ccaccagtca 480
gactgaatgt gtagctggcg aggaattact tccacttctg gcccagcaca agccctgctt 540
tgg 543

<210> 1395
<211> 364
<212> DNA
<213> Homo sapien

<400> 1395
cctatcatca gtggggttgt attcaccatc atccagggta ccatcttcat acaaggtact 60
agctatgacc aaccgaaact tgtcacccaa gtctacaggg taaatttgaa tgtttacatc 120
taagattaga tccatcttga aagattcact ctcacaatgc agtcgagaca ctcggtcaaa 180
cttcttgccc tccgggtcaa tatccttcac atcgaaaata tcctcaaaca ggatgcccgc 240
catcgcgagg gggccacgag agcagcagaa ggggtgagag cgcgaccaca gttgggagta 300
cgtgcacccc ctagcgtgga caagaccgga gagaaccaaa agcacctcct gaaagcgcgg 360
cggc 364

<210> 1396
<211> 422
<212> DNA
<213> Homo sapien

<400> 1396
gctgctgctg ctattgtgtg gatgccgcgc gtgtcttctc ttctttccag agatggctaa 60
caggggcccg agctatggct taagccgaga ggtgcaggag aagatcgagc agaagtatga 120
tgcggacctg gagaacaagc tggtggactg gatcatcctg cagtgcgccg aggacataga 180
gcacccgccc cccggcaggg cccattttca gaaatggtta atggacggga cggtcctgtg 240
caagctgata aatagtttat acccaccagg acaagagccc atacccaaga tctcagagtc 300
aaagatggct tttaagcaga tggagcaaat ctcccagttc ctaaaagctg cggagaccta 360
tggtgtcaga accaccgaca tctttcagac ggtggatcta tgggaaggga aggacatggc 420
ag 422

<210> 1397

<211> 653
<212> DNA
<213> Homo sapien

<400> 1397
ctgacctgct atcccacccc aaatttcagc ctgaggtata tttcagtgaa ggcaggtagc 60
tgtgcttctc agagcagaga agcagtttta agagcaaaaa ggtagaggaa atctagaaaa 120
gaaccgtctt gatacagatt tatcccatgg tgtgaaggga gggcaaagaa cccagtggca 180
cttcgcttat ccagcaattt ctgtcactgt ggtgaccaac ttctgcccgt tccatagggt 240
cttgaactgc tcaggaactg ggaattcatt aaagtcaccg ccttctgtag gaatgaggac 300
attcatctcg gaagatttgg cactgactat ttcacaatcc agggaattct tgctcaggta 360
agcatggcag ccatctgttt tgttgatgga tatggttggc actttaccca ttacctgaac 420
tttgacatcc ttactgttga ttatctccac aatgcccacc acgtcatcga ataccaggcc 480
aagtttctta cagttatcta ctgtaatgga gttaattttg cccttgattt gcaatgtcgt 540
gttgacacac ttgtatatgt aagccacctg tttcagctct gtgtcctcaa tcaccagggt 600
ggaaacattt tcctgatttt ccctctccct tcttgccttc agttcaagta cag 653

<210> 1398
<211> 261
<212> DNA
<213> Homo sapien

<400> 1398
aaaattataa ctactcattc tttctttagc cttagataat ttgagcagaa gccacaacaa 60
gcaaaccaca ataaatttag aattggcaga aatccacatt aactcctctt cccaagtttc 120
cacactacta ccatttacag ttgtaggttt gtaatgtata attatgtaat gcasaaacta 180
gctttgactt gtgtracgat gcactgtcaa aggaagcaaa gtaagaattg aaattccaca 240
ttcccagaat ttaacactca g 261

<210> 1399
<211> 195
<212> DNA
<213> Homo sapien

<400> 1399
ctgattttat ttccttctca aaaaaagtta tttacagaag gtatatatca acaatctgac 60
aggcagtgaa cttgacatga ttagctggca tgattttttc tttttttcc cccaaacatt 120
gtttttgtgg ccttgaattt taagacaaat attctacacg gcatattgca caggatggat 180
ggcaaaaaaa agttt 195

<210> 1400
<211> 120
<212> DNA
<213> Homo sapien

<400> 1400
ctgcctccaa ccctttgggt ctccaccacc caagtttcct gtagggtccg ccgggtccag 60
gatcacaggc ctgggtttcg tgagctgcct tctcaggtac ttttcaataa tggggttttt 120

<210> 1401
<211> 284
<212> DNA
<213> Homo sapien

<400> 1401
ctgtagccaa aaagatgctg gggcagattg tggacaagta gaagcacctc cttcccctct 60
gcgacattga acggcgtgga ttcaatagtg agcttggcag tggtgggcgg gttccagaag 120
gttagaagtg aggctgtgag caggagcctc tgccagggga catgcaatct gcagggaggg 180
gctgaggggg gtcccatggt ctctgctgtc ttctctgtcc acctctttgt agaggagctt 240
gagctccagg aatgctctgg tcagggctgc tgtgactgtt ggcc 284

<210> 1402
<211> 198
<212> DNA
<213> Homo sapien

<400> 1402
ccaggtttct gctggtacca ggctaagtag ctggtgctgg cgggaacact gtgactggcc 60
ctgcaggaga gggtggctct ttcccccgga gacagagaca gcgtgtctgg agactgtgtc 120
acttcaagct ctgcgatgcc atctgggagc cagagtagca ggaggaagag aagctgcgct 180
ggggtttcca tggttccc 198

<210> 1403
<211> 441
<212> DNA
<213> Homo sapien

<400> 1403
aaactcaaaa ttgacaaatt aactagcttg ctttttgtca tttggaagac taccattatt 60
caaatttatt atgtaataca ctcatccaga taatgaaaca tctgcgaaaa aaagtgtggg 120
aatcacctca tctgtgcata aaatggctat tatacatgaa tgcagacgtt tgaagttaga 180
aaggaatata actcaaatag caaaaggtcc taattacaga gtttacaaat aagcagtttt 240
attttcaaaa gtacatagta agtccagact gggctattgc caaagaacta atctttagtc 300
tacttcaaca tgttacatgg tattcctgac tctacagact atcagcatct gtggaggtta 360
gctcctaaag gtcccaaaga acaggaaaca tgcaggaata aaggactcct catgaagagc 420
aggtgggagc gagtgggcag g 441

<210> 1404
<211> 243
<212> DNA
<213> Homo sapien

<400> 1404
tgaaggggtt cttggaagac ctggcacctc cagagcgcag cagcctaatt caggattggg 60
aaacatctgg gcttgtttac ctggactata ttagagtcat tgaaatgctc cgccatatac 120
agcaggtgga ttgctcaggt aatgacctgg agcagttaca catcaaagtg acttcactgt 180
gcagtcggat agagcagatt cagtgttaca gtgctaaaga tcgcctggct cagtcagaca 240
tgg 243

<210> 1405
<211> 168
<212> DNA
<213> Homo sapien

<400> 1405
aaaccactgg atctatctaa atgccgattt gagttcgcga cactatgtac tgcgtttttc 60
attcttgtat ttgactattt aatcctttct acttgtcgct aaatataatt gttttagtct 120
tatggcatga tgatagcata tgtgttcagg tttatagctg ttgtgttt 168

<210> 1406
<211> 486
<212> DNA
<213> Homo sapien

<400> 1406
ctggacatac agaaattgtt gaatttttgt tgcaacttgg agtgccagtg aatgataaag 60
acgatgcagg ttggtctcct cttcatattg cggcttctgc tggccgggat gagattgtaa 120
aagcccttct gggaaaaggt gctcaagtga atgctgtcaa tcaaaatggc tgtactccct 180
tacattatgc agcttcgaaa aacaggcatg agatcgctgt catgttactg gaaggcgggg 240
ctaatccaga tgctaaggac cattatgagg ctacagcaat gcaccgggca gcagccaagg 300
gtaacttgaa gatgattcat atccttctgt actacaaagc atccacaaac atccaagaca 360
ctgagggtaa cactcctcta cacttagcct gtgatgagga gagagtggaa gaagcaaaac 420
tgctggtgtc ccaaggagca agtatttaca ttgagaataa agaagaaaag acacccctgc 480
aagtgg 486

<210> 1407
<211> 560
<212> DNA
<213> Homo sapien

<400> 1407
aaatatatgc ttttctagaa tttgatgttt gaccatttat gacttaatta ccagagagcc 60
agtaaattag gacagtgttt caacaagcct aggctatctc gtaagttgaa aaatatccca 120
ctatagttgc ttcatgagta tgaagtaaga tggcctctga tttacactgg ttcaatttac 180
aaattttcaa ctttatgata ggtttatcag ggtactaaat gcatttcaac ttgatagttt 240
caacttatga taggtttacc aggatgtagt cccactgttg aggagcatct atttaggagt 300
taattacttt agtaataagt ggaaagtaag ataccttgag taatgtttgc ctataaaatt 360
gtcagcgtat ttttacacta ttggctcaag aatgttataa tgctaaggga cataagttgg 420
caaccacttg gtttttggaa ggactttcgg tattgtatta gaagtctgcc ctagctgtta 480
aatttctggg tatttatcct aaggaattaa ttaaagagtt aattgttcct ttcttcagtg 540
ggccattgtt ttagatattt 560

<210> 1408
<211> 360
<212> DNA
<213> Homo sapien

<400> 1408
ctgcctagtt gtagttgaca gacaacttta taagctctag tcaaccctat tgactaagct 60
tctgaaccac tagcatagtt ctagggtcag gcggatgcct actgtgggca ggaaagtgat 120
gcatgcatgt gtgggagcag tgtcttaatg tctgaaatag tagccatgag ctacatgtgg 180
ctatggagca cttgaaatgt gggagtccaa attatcatgt gctgtgagtg taaaataata 240
tgtttctaag accgtgtgtg aaagaatata aaatatctca ttaaaaaatg tttatattga 300
gtacatgttg aaataatttt atatttgtga cacattgtgt taaataaaat attaaaattt 360

<210> 1409
<211> 208
<212> DNA
<213> Homo sapien

<400> 1409
ccagtccaac ctgctcctca ttattgtata aatgagcaga atcaatatgg cggaagccag 60

cttcaattgc caatttggtg gcctctaaag ctttactttt aggaacctct gcaggcgcat 120
aggtgccaaa tcccaggaca ggcatgaagt gaccatcatt cagcttcaca cactgatatt 180
tcgaatccat ttctgtcact agcctggc 208

<210> 1410
<211> 404
<212> DNA
<213> Homo sapien

<400> 1410
aaaaaaagga aaaagtttta ttacgaaact agtttgtata aaacagggtt atacatattt 60
ttgtaagttt gtaataaaac agtaagaaaa aaaaggcagt aatagaaatc tccaaaaggc 120
aacctatcaa aaccaactgg ctgccacttt gagtttggac agtagctgca taaactttgt 180
tcttcttgar cagtatttaa taacatcatt aatacattaa caacatttct ataaagtaag 240
acacattggt gctgaagtac aactggtggc ctcttgatct cacctatgag gagagttctt 300
tacamawcca catagggaaa attgcagttg taaggtgarc tacacatcta aaatatgcag 360
aggtaatagc attacatgtt aaagtatcaa gatatacaca tttt 404

<210> 1411
<211> 623
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(623)
<223> n = A,T,C or G

<400> 1411
ccacttgttg agatatgggg agcctacact ccggagggst gtacctttag cactggccct 60
catctctgtt tcaaatccac gactcaacat cctggatacc ctaagcaaat tctctcatga 120
tgctgatcca gaagtttcct ataactccat ttttgccatg ggcatggtgg gcagtggtac 180
caataatgcc cgtctggctg caatgctgcg ccagttagct caatatcatg ccaaggaccc 240
aaacaacctc ttcatggtgc gcttggcaca gggcctgaca catttaggga agggcacccct 300
taccctctgc ccctaccaca gcgaccggca gcttatgagc caggtggccg tggctggact 360
gctcactgtg cttgtctctt tcctggatgt tcgaaacatt attctaggca aatcacacta 420
tgtattgnat gggctggtgg ctgccatgca gccccgaatg ctggttacng tttgatgagg 480
agctgcggcc attgccagtg tctgtccgtg tgggccaggc agtggatgtg gtgggccagg 540
ctggcaagcc cgaaaactat cacagggttc cagacgcata caaccccagt gttggtgggc 600
ccacggggaa cgggcagaat tgg 623

<210> 1412
<211> 171
<212> DNA
<213> Homo sapien

<400> 1412
gcggcgctgg gggtgctgga gtccgacctg ccaagtgccg tgacacttct gaaaaatctc 60
caggagcaag tgatggctgt aactgcacaa gtgaaatcac tgacacaaaa agttcaagct 120
ggtgcctatc ctacagaaaa gggtctcagc ttcttggaag tgaaagacca g 171

<210> 1413
<211> 189
<212> DNA

<213> Homo sapien

<400> 1413
aaaagtcata agggttttat tttgtatcat caaaatattc tataaggtcc caaatactct 60
ttttcaaccc atgaacagta agaatttgtg aattctgata atgaaaaaag ttttcctcca 120
ggtatgtttg tttcacattc agtcctaaag ccttgagcta tgtgtacttc cctcacacag 180
gaacaccag 189

<210> 1414
<211> 564
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(564)
<223> n = A,T,C or G

<400> 1414
cctccccagc gcccaaaggt ctattacaag tacctataga cttttcacat ataagttcta 60
gtgggtacaa gctttttttt tttttttttt tttttttttt tctattgggk atttcattca 120
ttttgggggg ggaacaaatt ctacaaactg ctttaatatt gkcctttttt tctaatattc 180
acattaactt tttatgtaaa acataccaat gcttttaata aagcttacat aggaataaac 240
tattatagac ctgcatagat ataagtaccc atgtattaat ctacattaaa ataatggatt 300
ttattctgcg aaractccaa gttgctcctg ggkgctaagk gaagcactta gggaaatgtg 360
ttcagtcttt gaggtcatag gaacattara ttatatcaaa ggaaacctgg agccatcagc 420
taagtggccc ttctgtcctg tagatacata aaaactaatg ggctccgcta tgcggctcac 480
tttctgctat tagatactat gaggcactaa naaaaaacta ctgcctgcat catatctttc 540
ttcggtttga gataaagaga atgg 564

<210> 1415
<211> 231
<212> DNA
<213> Homo sapien

<400> 1415
ctgcgcttgg ataacaagta attcaacgca cgcacttaac agaaatgtta aactataaca 60
agcaccattt gaggattaac aggaacattt ttttgaagat ttcaaacgaa ctcgactttc 120
agtataattg tacctaaagt atttataaac agctcatcgg agcctctatt tgtcatagac 180
ttttgagttg attgttggga ccacataata ggaccatttt tttttgtctt t 231

<210> 1416
<211> 540
<212> DNA
<213> Homo sapien

<400> 1416
cttgatttag gatctgtggt gcagggcaat gtttcaaagt ttagtcacag cttaaaaaca 60
ttcagtgtga ctttaatatt ataaaatgat ttcccatgcc ataattyttc tgtctattaa 120
atgggacaag tgtaaagcat gcaaaagtta gagatctgtt atataacatt tgttttgtga 180
tttgaactcc taggaaaaat atgatttcat aaatgtaaaa tgcacagaaa tgcatgcaat 240
acttataaga cttaaaaatt gtgtttacag atggtttatt tgtgcatatt tttactactg 300
cttttcctaa atgcatactg tatataattc tgtgtatttg ataaatattt cttcctacat 360
tatattttta gaatatttca gaaatataca tttatgtctt tatattgtaa taaatatgta 420

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catatctagg tatatgcttt ctctctgctg tgaaattatt tttagaatta taaattcaca     480
tgtcttgtca gatttcatct gtataccttc aaattctctg aaagtaaaaa taaaagtttt     540
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<210> 1417
<211> 350
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(350)
<223> n = A,T,C or G

<400> 1417

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ttnatcatct aactgtggga tctatttcat ttctggaaat aacacaactt agttctaggg      60
ctttcatgca catgaaatat aaaacagctt agttgttctg aaaacatgac aatggttaat     120
tttattcaag tcccaacact gagttcagag cacttctcca taggccccat taatctctcc     180
aggtttctgg gagtatcatt aaatccctcg gcatccttaa gaagcaggtg cttagcaaac     240
atccagtttc caaatgagag tcagaggggc ttgatcctga aagtgtagta ttttcctgcc     300
ttgtcctact ggtatagctt cttggaccta aaatctctct cctgctgagg                350
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<210> 1418
<211> 425
<212> DNA
<213> Homo sapien

<400> 1418

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tgctaggcag ccttattttc ataacccawt tagggaaagg aaatttagga ttttcaaggc      60
tacattaatt tttcctccat caaatcttga tttgttcttg ataaaaatga gttcttttgg     120
ggaaattctt tctttagaca ccaacttggt tttctcatc ttccacagaa taattgaacc      180
cctgacctct agatgttcaa aattccgctt caagcctctg tcagataaaa ttcaacagca     240
gcgattacta gacattgcca agaaggaaaa tgtcaaaatt agtgatgagg gaatagctta     300
tcttgttaaa gtgtcagaag gagacttaag aaaagccatt acatttcttc aaagcgctac     360
tcgattaaca ggtggaaagg agatcacaga gaaagtgatt acagacattg ccggggtaat     420
accag                                                                 425
```

<210> 1419
<211> 390
<212> DNA
<213> Homo sapien

<400> 1419

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aaactcttgc tattgaattg agatgattaa aatggtgact taatccgtag ttattttgca      60
cccactgaaa ggaaagtgct ttccagaata atatgaagta tctaaaagtg tcaccttttc     120
ttgcctgatc aacaatttgg gcttcctgtt tgtacaaggg gccatttggc atacctttca     180
cagcttttat caggccaagt taaaggctga ctacattttt tcatcatgag gaaagcagtt     240
gaaatgaggc atgagttact gtgcattggg attttagaac aattttcttg tgacagctct     300
ttttgtgaag ttaggttctt aaaagtgccc atgatggtca cttaaaatgt gcagtaatag     360
cactgccagg atcaagcatg aaaggctttt                                      390
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<210> 1420
<211> 480
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(480)
<223> n = A,T,C or G

<400> 1420
ttgctgaaca atgacatcgt tttctccagg ggttgaaatc catgtccatg gctgacaacc 60
caacaaggct gggacccaaa ttcgtacaga gatgaggcag agtggagaga aacaactctg 120
gctgagccag agtctccagc cactacttct tattcctggg ctttagctct tcggctgcat 180
tacgcaggaa aatgtaattt tttttctggg gattataaaa ttcatgtccc tttgaccagt 240
cgtagctgga agcgtatgca aatatgtttc cattgygatt gaaacagcaa gctgasatgg 300
gctgayctaa ctgttccgaa gnttttagtt ttgktctggc atctttgycc cagaagctga 360
atctaccatc agatcccaca gttgcaaggg tgccatgaac aggatggaac gccgattcca 420
tttacccgca taaatgycct gaggagctga agtgttggtt ccattagatc gatgacattt 480

<210> 1421
<211> 453
<212> DNA
<213> Homo sapien

<400> 1421
aaactgattg aggtcacagt attttattat ttggggtcct caccacagga aacactgcga 60
tacaggggca aaagagatgg cagtgccaat taaattaata caacaaaatc aatgcagcac 120
caaccaagac tgccaggtct ggtgtcatgg gtatgcccag agcccaggag ttcagaaggg 180
ccctaagcct gatttaatgc tctgctgttg atgtcttgaa attcttaaca atttttgaac 240
aaggggcctg cgttttcact tcgcactggg ccttgcaaat tacatagcga gtgctcataa 300
aagaactcag aaacgtggta cctctcttcc tggtggatac aaataaagaa atctggatcc 360
aaagttgaaa gttgctggcg atatcattca agtaggactc taaatagtgg attaagatga 420
gggtgggcct gggtgaagat tctttccagc ttt 453

<210> 1422
<211> 542
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(542)
<223> n = A,T,C or G

<400> 1422
tttncttgac cactatacgg cacaacctag gggstgtawa aaacctascr caatgcagaa 60
gggtgaagct tcatgacaat tggtctcggc aataatttgg gggatgtaac atcaacgaat 120
cagacaacaa aagcaaggga atacacatgg nactaaatca gtgtgnggaa aaatatccca 180
aacaggcaaa gcacaacatg gamtagatat atgcacattn atggaccctg naggcakkac 240
tcacaaacat actacctggg aagcamctgg acctttaagg gatgaggtag attcaacaaa 300
cagggcancg tatmttccac tgggatagca ttccagcctt aaaaataang aaatcttgaa 360
aagnactaca ataaggacaa atctcgaaca cattctgtta agtaaaacaa gacaagccaa 420
aaagggaaaa ctgtataatt acacctatgt aaaatattta gtcaaactca aagaaaccaa 480
gtgttgtagt ctcagcaggg caccaagatg naaacagtct ctcatagnct gagatangca 540
tc 542

<210> 1423

<211> 252
<212> DNA
<213> Homo sapien

<400> 1423
ttaatgccaa atggcaaagt tgcatccgtg gaaatggtta aatatcatca ctgtcgggat 60
gaacccctgc acgccctcta tgacaatgtg gagaaactct ttccaggttt tgagatagaa 120
actgtgaaga acaacctcag gatccttttt aataatgctg taaagaaacg tttgatgaca 180
gacagaagga ttggctgcct tttatcaggg ggcttggact ccagcttggt tgctgccact 240
ctgttgaagc ag 252

<210> 1424
<211> 273
<212> DNA
<213> Homo sapien

<400> 1424
tttccactct gcacattgta gagggaacac tctgtaggcc catgggtccc ttactagaga 60
ggttgagtga atttgccttc agttaacatg ggaccttctg tttagcttcc tcttgcttcc 120
caaagatttt aagcattttg taaatgtata aactcacctc tggtaacagt ggcccagacg 180
ctgctttgtg ctaaaagcat gggaaatgta aaggcagtct ttctctggga aatggatgct 240
attctattct gctgccccta cctgttcctg agg 273

<210> 1425
<211> 618
<212> DNA
<213> Homo sapien

<400> 1425
aaaaaccttg tatagcaaaa taacttaaaa ccctttgtga tatcatctta ccagtttatt 60
tggtaaaaac aaacagttat ttggtatttg tcagaattct tcagtgcctg ctattacagc 120
tattttccaa ttactaattt gattatactc actcaaggca gtgcaagatc ttgaagtact 180
ttttagcagt taagtaatat tgaattgtat tgaatagttt acatagttta ttctagtctt 240
tgaaaattac tgaacatgga caatgtgcat gtcattgaca tctgccttag aacttctggg 300
acaatcctga ttcgagagat tctatcccat tatttacata taccaaaaat actttgttaa 360
tttaatgtgt tggcttccca actcctgaac acgacacaat tttattatta gattttgtat 420
ggtgatttta ggctatgaaa acatgatcat tatatgtata tagatacatt tttatttgtt 480
acaaatgttt gagcagctca ctagcccacc cctcctctat tttgggtaag agaatttact 540
accttttta actatgtagt tgagagcaac atgtattttg ttattttag aatggtcagt 600
atattgctat aaaatttt 618

<210> 1426
<211> 565
<212> DNA
<213> Homo sapien

<400> 1426
gtggtagaaa gagatgacgg aagcacatta atggaaatag atggcgataa aggcaaacaa 60
ggcggtccca cctactacat agatactaat gctctgcgtg ttccgaggga gaatatggag 120
gccatttcac ctctaaaaaa tgggatggtt gaagactggg atagtttcca agctattttg 180
gatcatacct acaaaatgca tgtcaaatca gaagccagtc tccatcctgt tctcatgtca 240
gaggcaccgt ggaatactag agcaaagaga gagaaactga cagagttaat gtttgaacac 300
tacaacatcc ctgccttctt cctttgcaaa actgcagttt tgacagcatt tgctaatggt 360
cgttctactg ggctgatttt ggacagtgga gccactcata ccactgcaat tccagtccac 420

gatggctatg tccttcaaca aggcattgtg aaatcccctc ttgctggaga ctttattact 480
atgcagtgca gagaactctt ccaagaaatg aatattgaat tggttcctcc atatatgatt 540
gcatcaaaag aagctgttcg tgaag 565

<210> 1427
<211> 144
<212> DNA
<213> Homo sapien

<400> 1427
ccactagtta tttttatgta atcaattacg gggtcattag ttcatatccc atatatggag 60
ttccgcgtta cataacttac ggtaaatggc cgccaccgcg gtggagctcc agcttttgtt 120
ccctttagtg agggttaatt gcgc 144

<210> 1428
<211> 214
<212> DNA
<213> Homo sapien

<400> 1428
ccactagtta ttattatgta atcaattacg gggtcattag ttcatagccc atatatggag 60
ttccgcgtta cataacttac ggtaaatggc ccgcctggct gaccgcccaa cgacccccgc 120
ccattgacgt caataatgac gtatgttccc atagtaacgc cgccaccgcg gtggagctcc 180
agcttttgtt ccctttagtg agggttaatt gcgc 214

<210> 1429
<211> 253
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(253)
<223> n = A,T,C or G

<400> 1429
ccactagtcc antttngtgg aattctgaag ccttaattgc ttatatccat gtttctagtg 60
aaatgagagg gtataacaaa aaagagaaca ggaggaaagc ttcgctgtgc ctgaggaaat 120
aatctagtca aggcagcaag tctggatagt gctatagaga tgagatacct gagcagttcc 180
agaggaagag gtggagatca gaggccagtt ttcagtgaac actgtaaaga aaagccagat 240
gatgtgtcct gga 253

<210> 1430
<211> 232
<212> DNA
<213> Homo sapien

<400> 1430
aaattttact agtgttactt aatgtatatt ctaaaaagag aatgcagtaa ctaatgccct 60
aaatgtttga tctctgtttg tcattacttt ttcaaaatta ttttttctg taaagtataa 120
tatataaaac ttcttgctta aattgaattt ctatattagt ggttaattgc agtttattaa 180
agggatcatt atcagtaatt tcatagcaac tgttctagtg ttttgtgttt tt 232

<210> 1431

<211> 734
<212> DNA
<213> Homo sapien

<400> 1431
cattatacaa cactatattg ccaggtcaaa gagggcaggg acgtaaatgt acactaaaat 60
gcmaatgtat cccaaagaga taaaacaaat tccatttaca gcatgaaggt ttacaaatgt 120
acacctgtac aaccaaggaa agcatcacta ctaaattagc aaggctttta taataaacat 180
tgaaasaaga tttcctttca aagtgtaaac ttacatctat tactacacac acaatgcata 240
tatttataga aagcaaaaag agctatctga atatgtaatc atgcttaaat gctgagctat 300
caaattcact tttcagtggc cccttttcat ctctatctgg ttcctacttt ctgcctctat 360
gaaaaagcaa aataaagctc aacacttcct caacatgtct gtaattctat aagcaaaaca 420
aaatacaaat ttccactctt tctcattgca aaccaaactg aaaagttaat aagtgactta 480
acttttcatt tagtgcactt aattggaagt gtcaccatga ttttgtattt aactcttaca 540
acaattacat atgtaagtat atacaatatt tctgtacatt gccagagaca ttttagggca 600
gtaattgtat taaaaccaca tctactgtaa ataatgttag gttcttttca tctcaaacca 660
ctttattctt gcctacttac tcgttatttg catgatagtt tgtgaattat caaaatacaa 720
cttaactctt taaa 734

<210> 1432
<211> 542
<212> DNA
<213> Homo sapien

<400> 1432
tttaagaaag agcctttgag aaacatgcat acttttctct tttctcctat attcaatact 60
catatagcct aaaagatgga aactggttca agaatttaaa tgacttgttc cctaaaaagt 120
taatctcctc acctttgtga aatatatcaa gtgctttcta taaataaggg caggaaatgc 180
taacttcata agcatagtcc tagtcattaa aataatttga tcatcttcta aaatttaagt 240
atgatagtaa cacagtaata tggaaaatct caatatactt aacacttcct aaacagcaca 300
atgaaatgtt gttcaaggtc tgaattaatt tgctacagga cctaagcaag tctgtttgct 360
tatcttttgg ctttaaaatt ctttaagtct aaaatggtga taattttaga ataaactgac 420
aatgtgggga acaaacttaa attcacaaac actacccata tgctcaaaaa ctctctggga 480
taattagttt cttcattgta actattgatg tactattatt tcatctttcc attagctcta 540
ct 542

<210> 1433
<211> 175
<212> DNA
<213> Homo sapien

<400> 1433
ttaaattgat tcaaaaaaac ttgacacctg tcatgtaggc cacaaaatag tagcgaacta 60
tactaagtgg tatagcccac tgtggagtgt ggtcttttac tcttccaaat agcccaagtt 120
ggcaaaggtt acttaaaaac ctgcccccca aaaagctaac ttttggtaga ttttt 175

<210> 1434
<211> 90
<212> DNA
<213> Homo sapien

<400> 1434
ttaatcacta ttgatggaag cttatattcc ttatgaatat atacatgtat gcatatatac 60
atctctgtat gaatcactca aagcaatttt 90

<210> 1435
<211> 153
<212> DNA
<213> Homo sapien

<400> 1435
tttacctttg tgctttgaag gttctaccat ttakaaagta aaaagccaac ccacagaatg 60
gaagaaaaga ggacagactc taacaagcgt tcacaaagat ggagagaaat tgtaaccctc 120
atatattgct ggtagaattg tagaaagatg cag 153

<210> 1436
<211> 483
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(483)
<223> n = A,T,C or G

<400> 1436
tttttagttt aaagaagagt tttgccactt aracangga gctwtgtctg gaaaatacac 60
tgagttgaaa cacttcatcc ttggaaggat tatataagat gaacagytgt gataaatgtg 120
tagattagag ggatgtgaat gggcagttag tccagtgccc tcatttaaga ggccaagatc 180
ctgattcaga ggaggcatcc tttgcccaga gctgcttagc taatctgacc aaatgttggg 240
aaaaatgtct cacctaaccc actattcctt aattatggat tttgtgaaaa acaatagaac 300
atgttaatga gtaatttata ttagttcgat gtattacaat tttttagctt taaattacag 360
ytttcttata atgttgaaat gttttagaat cctttgaatc taagtatttg tttcctaaat 420
gaaacatttg tacaacattt gatgttttta cttatgaaat attctcctcc cccaagaaaa 480
ttt 483

<210> 1437
<211> 171
<212> DNA
<213> Homo sapien

<400> 1437
ttttgccacc tcaagaagcc attttcttgt ctgtttcctt ctttacctac ccctacaacc 60
tatgaacaaa taccataact taaaaattta ggtagtctac aactcctaca aattttaagt 120
tcagagacta cccaaagaac tgtggaagat gcagcaatat aaaagttttt t 171

<210> 1438
<211> 408
<212> DNA
<213> Homo sapien

<400> 1438
tctgagtgga ggtaggctaa caacacattt tgactttstc ctcaaaggat agctttgaaa 60
aacaagtgta accaattgtt acaccaaatt aaaatggcaa tattaaatcg gtaacaaaac 120
gatccacatt ttatacaata ttgtatttcc aaacatacat aggtcatgaa aatcagagaa 180
cctaatatag caccgttgaa accattcatt atccttcatg tgtgtatgca attcagaatt 240
tcggcagaag acaacaaatg gaaaatgcct ttcgtttcta taaatcattt tggatttcaa 300
ttaaatcttt gccttagtaa agggtattct tatctcaaga tcaattagcc gtttttagct 360

ccaccgtttt ggaagtaaaa atgatgagct acatctactt tttaattt 408

<210> 1439
<211> 168
<212> DNA
<213> Homo sapien

<400> 1439
ttacacaaca gctataaacc tgaacacata tgctatcatc atgccataag actaaaacaa 60
ttatatttag cgacaagtag aaaggattaa atagtcaaat acaagaatga aaaacgcagt 120
acatagtgtc gcgaactcaa atcggcattt agatagatcc agtggttt 168

<210> 1440
<211> 307
<212> DNA
<213> Homo sapien

<400> 1440
tttcacatac gaagaaatca actgtgatta tgaagtgaca gccagctaaa tatgtcttgt 60
attttctctc ttcctttttt tgcctaactc atcctttact tccattcctg cttccatggt 120
aatgcaggct caaataaatt actaggatac aagattactt caagcctctt ttctgtggaa 180
ctcataatat gataagcatt tgttacaaga ttgcctgtag ttgtttaggg gacaaattat 240
attagggaaa gaaagtcttt ctttagttgg ttaaattttc tattataatt gggtactaaa 300
tttattt 307

<210> 1441
<211> 684
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(684)
<223> n = A,T,C or G

<400> 1441
ttaagttctg gagtgttcac ttctgagcct gaattccctc ccctgcaaaa tgggggaata 60
ccctcctcag agggtccctg cgagggtgag gggagattca gcatggcagg tgtgctgggc 120
acggcagggc ctgggaaggg cagatccttt ccccatccct gccacaaaca acccaaacct 180
ttaaaggaga gcaatggcct tgtgtcaaaa acaaaaacaa aacaaaaccc tgtcctagga 240
gactggggcc ctaatttcta atagcaagcc tttatgagtc cctaacactc tactgggctg 300
agtatctcac acgccagagg ataacctgcc ttctgctcac caccaccccg tagtagttgt 360
cattgtgtcc atttcacaga tgaggcaaag gctcagaaga gtcatgtgtt aaaccagctt 420
ctagagccca tgcaggagct gcaggtggga gaatcacctc taggtgctct tcccatagaa 480
tcctcacctc ctgagtgtca ctcactcagc ttccaatggg tgtgtgacct ttgaccagct 540
ttcttcctct ctgggcctca gtttcccacc tggacaaagt aagaggtctc ttggcttcan 600
gtaagttctt cctaaacttc tttttccttt tcatttgagc atcctcttca tttttgccac 660
ctctctgtca tttacaggct tttt 684

<210> 1442
<211> 166
<212> DNA
<213> Homo sapien

<400> 1442
aaaaaatcag cccctaattt ctccatgttt acacttcaat ctgcaggctt cttaaagtga 60
cagtatccct taacctgcca ccagtgtcca ccctccggcc cccgtcttgt aaaaagggga 120
ggagaattag ccaaacactg taagctttta agaagaacaa agtttt 166

<210> 1443
<211> 194
<212> DNA
<213> Homo sapien

<400> 1443
tttgccctgt caaaagaaga gctaaagaca gttatataaa aattaaggtg ggctttcaga 60
ctggctaaca caacaacatt ccatgagtag atggtaattt atttttgttt atccatttcg 120
ttgggagcaa ggacaaaaat gtaaatctac accttgctta tcaaaattgc cgaaaaaaga 180
atgctctgcc tttt 194

<210> 1444
<211> 96
<212> DNA
<213> Homo sapien

<400> 1444
gagagtcgag agtgggagaa gagcggagcg tgtgagcagt actgcggcct cctctcctct 60
cctaacctcg ctctcgcggc ctacctttac ccgccc 96

<210> 1445
<211> 365
<212> DNA
<213> Homo sapien

<400> 1445
gggatgagct gaccaagaac caggtcagcc tgacctgcct ggtcaaaggc ttctatccca 60
gcgacatcgc cgtggagtgg gagagcaatg ggcagccgga gaacaactac aagaccacgc 120
ctcccgtgct ggactccgac ggctccttct tcctctacag caagctcacc gtggacagga 180
gcaggtggca gcaggggaac gtcttctcat gctccgtgat gcatgagggt ctgcacaacc 240
actacacgca gaagagcctc tccctgtctc cgggtaaatg agtgcgacgg ccggcaagcc 300
cccgctcccc gggctctcgc ggtcgcacga ggatgcttgg cacgtacccc gtgtacatac 360
ttccc 365

<210> 1446
<211> 386
<212> DNA
<213> Homo sapien

<400> 1446
tctggaaagt tcttgctcgg gtcccttcac ctccccgccc tttcttarag tgcagttctt 60
agccctctag aaacgagttg gtgtctttcg tctcagtagc ccccaccccca ataagctgta 120
gacattggtt tacagtgaaa ctatgctatt ctcagccctt tgaaactctg cttctcctcc 180
agggcccgat tcccaaaccc catggcttcc ctcacactgt cttttctacc attttcatta 240
tagaatgctt ccaatctttt gtgaattttt tattataaaa aatctatttg tatctatcct 300
aaccagttcg gggatatatt aagatatttt tgtacataag agagaaagag agagaaaaat 360
ttatagaagt tttgtacaaa tggttt 386

<210> 1447

<211> 261
<212> DNA
<213> Homo sapien

<400> 1447
aaaattataa ctactcattc tttctttagc cttagttaat ttgagcagaa gccacaacaa 60
gcaaaccaca ataaatttag aattggcaga aatccacatt aactcctctt cccaagtttc 120
cacactacta ccatttacag ttgtaggttt gtaatgtata attatgtaat gcagaaacta 180
gctttgactt gtgtaacgat gcactgtcaa agtaagcaaa gtaagaattg aaattccaca 240
ttcccagaat ttaacactca g 261

<210> 1448
<211> 404
<212> DNA
<213> Homo sapien

<400> 1448
aaaaaaagga aaaagtttta ttacgaaact agtttgtata aaacagggtt atacatattt 60
ttgtaagttt gtaataaaac agtaagaaaa aaaaggcagt aatagaaatc tccaaaaggc 120
aacctatcaa aaccaactgg ctgccacttt gagtttggac agtagctgca taaactttgt 180
tcttcttgaa cagtatttaa taacatcatt aatacattaa caacatttct ataaagtaag 240
acacattggt gctgaagtac aactggtggc ctcttgatct cacctatgag gagagttctt 300
tacaaaacca catagggaaa attgcagttg taaggtgaac tacacatcta aaatatgcag 360
aggtaatagc attacatgtt aaagtatcaa gatatacaca tttt 404

<210> 1449
<211> 230
<212> DNA
<213> Homo sapien

<400> 1449
aaaagttcta gtggtacggt aggagctttg caggaagttt gcaaaagtct ttaccaataa 60
tatttagagc tagtctccaa gcgacgaaaa aaatgtttta atatttgcaa gcaacttttg 120
tacagtattt atcgagataa acatggcaat caaaatgtcc attgtttata agctgagaat 180
ttgccaatat ttttcaagga gargcttctt gctgaatttt gattctgcag 230

<210> 1450
<211> 194
<212> DNA
<213> Homo sapien

<400> 1450
aaaaactcct tttggtttac ctggggatcc aattgatgta tatgtttata tactgggttc 60
ttgttttata tacctggctt ttactttatt aatatgagtt actgaaggtg atggaggtat 120
ttgaaaattt tacttccata ggacatactg catgtaagcc aagtcatgga gaatctgctg 180
catagctcta tttt 194

<210> 1451
<211> 106
<212> DNA
<213> Homo sapien

<400> 1451
aaagatgaca aatactggtt aattagcaat ttaagaccag agccaaatta tcccaagagc 60

atacattctt ttggttttcc taactttgtg aaaaaaattg atgcag 106

<210> 1452
<211> 349
<212> DNA
<213> Homo sapien

<400> 1452
ctgcagatcc tgcggaacgt cacccaccac gtttccgtga ccaagcagct cccaacctca 60
gaagccgtgg tgtctgctgt gagcgaggcg ggggcgtctg gaataacaga ggcgcaagca 120
cgtgccatcg tgaacagcgc cttgaagctg tattcccaag ataagaccgg gatggtggac 180
tttgctctgg aatctggtgg tggcagcatc ttgagtactc gctgttctga aacttacgaa 240
accaaaacgg cgctgatgag tctgtttggg atcccgctgt ggtacttctc gcagtccccg 300
cgcgtggtca tccagcctga catttacccc ggtaactgct gggcattta 349

<210> 1453
<211> 302
<212> DNA
<213> Homo sapien

<400> 1453
aaaaataatg tgcaagagca tcatgagaaa gaagaggggt gaagagataa tccagaggaa 60
catcaaatgt aagagtatac actcaaagac aggtttaaga aagaccagtc agagaagtaa 120
agaaaaaaat caagcaagaa taatgttgca aaaattaaca agaaagttgc aagcccagag 180
tggttagcaa tgccaaacta ccatgagtaa gccacataaa acaagaactt tgggttcaac 240
tgctttaaca atcagacctt tagattcaca taacaggagt tacaaaatta agagcctctt 300
tt 302

<210> 1454
<211> 268
<212> DNA
<213> Homo sapien

<400> 1454
caagcgtaaa ccgcgggagc cgagcccagc taggaatgca gacctcctga aaaccaagcc 60
gaggactgcg gggtccggtg tccacgcaga gtgtcagctt cctctggtgc aaccagcaag 120
tcttccagta tgaatcccac agaaaccaag gctgtaaaaa cagaacctga gaagaagtca 180
cagtcaacca agccaaaaag cctacccaag caggcatcag atacaggaag taacgatgct 240
cacaataaaa aagcagtttc cagatcag 268

<210> 1455
<211> 207
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(207)
<223> n = A,T,C or G

<400> 1455
ctgtcgagag cagccctgcc caagawtgnc gggtgggggc tggtgccaac gggttcccaa 60
ggscctttcm actttkgaak ggctggartt cttgggaaac cmaaacsktg actacctgsc 120
ttttttcttg ggcatygacs tgcttcattt ccaaaratga tggkgcaggt gaccttttcc 180

atcgtgagct aaaaaaaggt taggagg 207

<210> 1456
<211> 181
<212> DNA
<213> Homo sapien

<400> 1456
aaatttctgt ctgctaaaat ctatcaaata cattaaggaa aagtcccact tggcacatct 60
cccacaccag atgttaatta ttcatactgc atgactgagg attttggagg cagagagaga 120
ttcatctgca atatttggaa caccaatgga ggtctacgtc aacacagaat ttatacagca 180
g 181

<210> 1457
<211> 309
<212> DNA
<213> Homo sapien

<400> 1457
aaaaagwtca gagttgaaat gcctttcaac cattkccttc tgtggtcatt tttcttgctg 60
ccttttttcac ccaagattca gcagtcagat gtttactgca cacctattac ctattatttg 120
ctgttcttgc atggttcaaa ccaccattct gtagccaccc atcctttgcc ttatctaaca 180
aacatttttc caggaaggtg gaaaaggaag tgttgctctc attgtgtgac tcagtgctgc 240
tgtccatccc atggaaacat gggcacaatc aagtatttgt ccagcctatt gcaggctttt 300
cctgacttt 309

<210> 1458
<211> 117
<212> DNA
<213> Homo sapien

<400> 1458
aaagactatt gagaaatagg aaggtattga gagattattg ggtttcatca kagcagactt 60
aagtagcctg gttgatttta gatttgtcac agcaaaatca tgcttggatg ctcgagg 117

<210> 1459
<211> 575
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(575)
<223> n = A,T,C or G

<400> 1459
aaagaatgca taccagaaca tttataagca gtggagtgag kthtattaag aatagtacta 60
ctacaataaa cgctggctaa ataagaagtg cattatgtga agcactatgg gtggtatatg 120
cttwgmcaca tactctkgtt accttgaggy agatmacrca tgkgaaccaa cttcggcata 180
cattttcagt tgctgcgagg aatcatgtgt tttaacgaaa tgcgtcagta tgaaaaactt 240
gaaaatattc atgaatgawg aacgcmttag gaaaaaaata kstattctca tgcaattatg 300
tacagtctca ctgtgtarat ctcaaggcaa ggtttgcctc ctgtaaacca gatcaaggtg 360
ctatgagaga ncgccytgnc ttattgcatt tcttttctcc tmctgcgcca gcattatatt 420
gctctagnct ttatttttgt gtgcacactg acatgccatt aaaratgang ractatctca 480

catgtagaaa argaaagnmc ttgganköta cctcaggtcg ctaccacgct aagggygaat 540
tctgcaggat atccatcaca ctggcggcgc gattg 575

<210> 1460
<211> 444
<212> DNA
<213> Homo sapien

<400> 1460
ctgggggttc cttccttcac gttgagaacc tggagcagag agtctaccaa cttaagaaat 60
attagaaaga gttcagcaaa cagagtgagc tgaagtctaa tcctagaagt aaatccattc 120
ctacaagtca tcagcatcac ttgggagctt gttagaaagg caaattcttg gttcagccta 180
acacctacta aatcagaaac tctgggggcg gagcgcagca atctgtactt tcacaagccc 240
tgcaggtgat tctgagcctg taaaatttga gaaccagagc tgtcccccag gagataaatt 300
aacttctact tttttttgag ctactgcatt ttgggatctt attgttttat cagcttaaca 360
tgcatcctga tatgattact caggtatgtt tcaaccaatg ttggttaatg tattatcccc 420
aggaacttat tactagagga gcag 444

<210> 1461
<211> 536
<212> DNA
<213> Homo sapien

<400> 1461
ctgcaaccct gggactgacc gggaggctct gattatttac ccmaccacag gtaggttgtg 60
ttctgaatct caggttcaca ggttaaggtt cagcatcctc atcctccacg gggttggagt 120
tgttgctggt gatgaagggt ttgggtggct ctgcatagac tgtgatcgtc gtgactgtgg 180
tcctattgag gccactggct gagttattgg cctggcaggt atagagtccg ctgttcttct 240
cagtgatgtt ggagataaag agctcttgtg tgtgttgctg gatgttccca tcaatcagcc 300
aagaatactg tgcaggtggg ttagaggctg catggcagga gaggctgagg ttcacccctg 360
gacggtaata ggtgtatgag gggaaatgg tggggkcrtc ygggccatag aggacattca 420
ggatgactgr gtcgctgtgs tyarcactta atkcgttctg gattccacac tcatagggtc 480
ctacatcatt ccttgtgaca ytgartagag tgagggtcct gttgtcattg gacagm 536

<210> 1462
<211> 409
<212> DNA
<213> Homo sapien

<400> 1462
ctgakagacc aggagaagtt ccagatgcag agactgtgat gctcttgact atggaattat 60
tgcggccagt agccaagtta gagacaaaac aggcataggt cccgttatta tttggcgtga 120
ttttggcgat aaagagaact tgtgtgtgtt gctgcggtat cccattgata cgccaagaat 180
actgcgggga tgggttagag gccgagtggc aggagaggtt gaggttcgct cccgaaaggt 240
aagacgagtc tggggggggaa atgatggggg tgtccggccc atagaggaca tccagggtga 300
ctgggtcact gcggtttgca ctcactgagt tctggattcc acatacatag gctcttgcgt 360
catttcttgt gacattgaat agagtgaggg tcctgttgcc attggacag 409

<210> 1463
<211> 502
<212> DNA
<213> Homo sapien

<400> 1463

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ccttcagcct ggatccttta tattaagatc aatgaggacc atttctggaa gatgtctggc      60
atggtacaga ctgtctgagg ccractgaac acaggcccctt accctgattt tatcagtgaa     120
aagctatggg actagtttcc ttacctctaa aatggagaga ataatagaat cttccgtcta     180
agactkctgt gagcataagc cgagaaaatg gaggtaaact gcttagccca atacttggat     240
tatcgtaaat attcagtaaa actagccacc gttgttattg taattattat tttgtatttt     300
attatacatt tcatggaaac ttaaaagtta gtgataatca cctcattttc agttgccttg     360
ctttcttcct gtaaatttta ttctctctta tcttgctcac tgtctttaag cattgccagt     420
ttagtataat tattttcccc tatcctctat aaaatcatat acaggatgga tttgttgatc     480
tcagacatgt tcactgagtt tt                                              502

<210> 1464
<211> 294
<212> DNA
<213> Homo sapien

<400> 1464
ggcggctcgg actgagcagg actttcctta tcccagttga ttgtgcagaa tacactgcct      60
gtcgcttgtc ttctattcac catggcttct tctgatatcc aggtgaaaga actggagaag     120
cgtgcctcag gccaggcttt tgagctgatt ctcagccctc ggtcaaaaga atctgttcca     180
gaattccccc tttcccctcc aaagaagaag gatctttccc tggaggaaat tcagaagaaa     240
ttagaagctg cagaagaaag acgcaagtcc catgaagctg aggtcttgaa gcag           294

<210> 1465
<211> 249
<212> DNA
<213> Homo sapien

<400> 1465
gtgcaggtct tcagccgtga cccggtaccc cagctctaag ggaggtggca gcatcaaagg      60
ctcccctcgc ctgcgtggca gcaggggaat cttgcgtcta cggggcctag agtcatggga     120
tctgggggag ccacccctgg gggcaagtgt ctgccctggt gctgtacctg ccttgttttc     180
acagcggtga cccgaagaga cagcctgagg tccgtcctca ctcactgtgt ttgaggaact     240
gtgggccag                                                             249

<210> 1466
<211> 203
<212> DNA
<213> Homo sapien

<400> 1466
cctcagacac cttttaattg cttaggagaa accattgtct ctgactgcag gtttgaataa      60
gttgaagacc agagaaaagt acacactggg ctacaaagga atttggagat agccaaggaa     120
caggatttcc cctagcaagc taccttctgt tcaaatcatg aaaaaagact atttcccctt     180
agaataggga agcttgctat ttt                                             203

<210> 1467
<211> 223
<212> DNA
<213> Homo sapien

<400> 1467
ctgtcagaac aggaacgacc tgggttatgg aagcccagaa agggaggagg acttcttttg      60
gtcccagtga aagatgcttc cagaatctgt agccttactt atttgcttgg atctcactgg     120
aataacttgg tggtgaggtc accggttctg gggtgatcac tgggtttgct gcatagatgt     180
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ttggatagat gacactcaca ttgcttgatt gacagcagac caa 223

<210> 1468
<211> 177
<212> DNA
<213> Homo sapien

<400> 1468
ctgcattatg tgtgtttaga acgagaagtt gtttgtacag tatttttcta ttgaccgctt 60
ccgtcttgcc tgaaacctgg gcattctttc caatagacag aaaatcagag agtcaaatct 120
gatgcgcaat gagttgttct gagaccagta atccacggtg ctgcaatttg ggtttt 177

<210> 1469
<211> 185
<212> DNA
<213> Homo sapien

<400> 1469
ctgaagctga gaagtagcct atctatggar gagacttttg tttgtgttta attagggcta 60
tgagagattt caggtgagaa gttaaacctg agacagagag caagtaagct gtccctttta 120
actgtttttc tttggtcttt agtcacccag ttgcacactg gcattttctt gctgcaagct 180
ttttt 185

<210> 1470
<211> 482
<212> DNA
<213> Homo sapien

<400> 1470
ctgaccagga gggacggttc tgtggacgag gacttcgtag ctgaggagcc agatttcttt 60
ttggtccctt cctcctggaa tggaatcgtg gcgctactgt ggagatctga gttgatgtag 120
cacctgcttc ctcggatgta gtccgcaccc cggaccagat gccgctcggt cgtgggtctg 180
gagaaccggt atgggggaga ggagctctct tcaatgatcg gaggaatccg ctcgttactg 240
aaataccggc aaagggcatc ctcccctttc ctgccatgac ctcgaggtct ggcaaaaggg 300
tccacaatcc ccatccagtt cccatcagca ggcatggaca aaggccgtgg cttgccttca 360
gagggacgag aaagaaggtg acaagtttga tgagttctgg aactttagtg aaccgttccc 420
tttatgtata acttagacct cacaatacca cacccactta gacagaagca ataacaaatt 480
tt 482

<210> 1471
<211> 257
<212> DNA
<213> Homo sapien

<400> 1471
tgtgtgaact tagactkwtc aattcaacat ttttaacrta tkaaatacta ttgtgaattc 60
aatgaagtgt tcttatgcca ctaactttaa cctattccct tactcamgga tgtaggyaaa 120
rgatggtaac aatacactat tkggcaagat aatgtmctga catmtytagc aatstttttt 180
gmcagtggct tkcaactgma mwkaaskkam mkaatattgy tkctgtwsgt arattattat 240
tctgwywyta atcattt 257

<210> 1472
<211> 342
<212> DNA

<213> Homo sapien

<400> 1472
cttttgcgag cctctgccgc agcagctccg ttttcacgcg catctcgttt ttgtgtgtgt 60
gtttttgttt tgtttttgtt tttgtttttt tgtttcagag aattggaagc taaagctacc 120
aaagacgtag aaagaaatct tagcaggtaa gatgggcgag ctttccgtct cccgccccac 180
gataatcgta tatttctact ccgattcgcc ctttctgggt tgagaagttc ccccgtgaca 240
ttttcttccg cacccggaga gcagacattc gggagaagcg gcctggggga atactggagg 300
gattgcgggg agatgcgtaa ttacgcgtgt gtttctttct tt 342

<210> 1473
<211> 526
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(526)
<223> n = A,T,C or G

<400> 1473
ctgctacatg tcttcacagc ccaggaattc aaggcccagg tggcagcagg aagaaacagt 60
ggaaaagcaa ggggaagaga aaagagaaaa aggagggga aagtctgcat aactgtcata 120
acctctgctt ctcctgctct gtaacaaacc cacaaccagg aagagtcatg gtctggaaca 180
atcatgggac cccaaacgcc tgtaggtttt ttaccaccaa acatcaccca tggctgctct 240
aagctgtcat tttgttccca cagttaccta gcatcacgga tgcccaattt atggcccagg 300
aaggctgacc caggctaagg gcagtctcac tccacagcca tgcaatggac agtctgaatg 360
tttcctaccc cagaccttta ctgacctcta ctatttcctc ctctgatata aaagaaaaac 420
acttttaatt ttctnctgca tnctacatct cctnctaaaa antttggcct aattgncatc 480
aaaaccttgt aggaatctga aattttggtt cttctgaatc ttancc 526

<210> 1474
<211> 187
<212> DNA
<213> Homo sapien

<400> 1474
aaacttgttt gctgtgaaca attgtcgaaa agagtcttcc aattaatgct ttttatatct 60
aggctacctg ttggttagat tcaaggcccc gagctgttac cattcacaat aaaagcttaa 120
acacattgtc caaaaaaaaa aaaaaaaaaa gccccykccc sgggggscck ttmaaggggr 180
aawtccc 187

<210> 1475
<211> 474
<212> DNA
<213> Homo sapien

<400> 1475
ccattctctt tatctcaaac cgaagaaaga tatgatgcag gcagtagttt tttcttagtg 60
cctcatagta tctaatagca gaaagtgagc cgcatagcgg agcacattag tttttatgta 120
tctacaggac agaagggcca cttagctgat ggctccaggt ttcctttgat ataatctaat 180
gttcctatga cctcaaagac tgaacacatt tccctaagtg cttcacttag cacccaggag 240
caacttggag tcttcgcaga ataaaatcca ttattttaat gtagattaat acatgggtac 300
ttatatctat gcaggtctat aatagtttat tcctatgtaa gctttattaa aagcattggt 360

atgttttaca taaaaagtta atgtgaatat tagaaaaaaa ggacaatatt aaagcagttt 420
gtagaatttg ttcccccccc aaaatgaatg aaatacacaa tagatgtaca aaaa 474

<210> 1476
<211> 401
<212> DNA
<213> Homo sapien

<400> 1476
ccttggggac agggcaggag gacgcacacc tcatggacag ggcggccagg gctgagatac 60
cagcggggtg ggtattcccg gcgggtgctt acctccaaca gtgtcttgtc agcaaaggcc 120
atgatgccct caaagatgat gacgtttgca ccatacagtg ttttctgtga agaaacccag 180
gagttgcgga gcctggctca tgtgcctgca gccccccgag gccccctctg cagggccctg 240
gcctacccag tccttcttcc ggctgtgcgt ggtgaagtca taaatgggca ccttgacact 300
cttcccctgc ttcagcttct tgagggtgga aatgatgaag gtcgaagtca aaaggcatct 360
ggggtgggtc gaaagtttga aagtttgctt gtggtgccgg g 401

<210> 1477
<211> 753
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(753)
<223> n = A,T,C or G

<400> 1477
cagcatgctt aaaaagttgg aggaattgga acagaaatac acctwmcaac ctkrmcctnt 60
taccaaaaac aaacnagtgg tatkggamcc sacctttmrk ctttttcmac macttatttc 120
aaagytsrtt kgtggkgaaa agmcacycyk snatscywcc rcacccttgw aggcygttgg 180
acttrataac akknctgctn atnwntgtga ggggtgatay tgatgrtgaa attgcactta 240
gctgggttat aattkgaaag tcaaagtctt atttgataaa gatgtgaatg agagaaatac 300
agtaaaagga tttaggaagt tcaacatttt gggcacgcac acaaaagtga tgaacatgga 360
ggagtccacc aatggcagtc tggcggctga atttcggcac ctgcaattga aagaacagaa 420
aaatgctggc accagaacga atgagggtcc tctcatcgtt actgaagagc ttcactccct 480
tagttttgaa acccaattgt gccagcctgg tttggtaatt gacctcgaga cgacctctct 540
gcccgttgtg gtgatctcca acgtcagcca gctcccgagc ggttgggcct ccatcctttg 600
gtacaacatg ctggtggccg gaacccagga acctgtcctt cttcctgact ccccttgtg 660
cacgatgggc tcanctttc anaagtgctt gagttggcag tttttcttnt tgtcacccaa 720
aagaaggtct caatggnggg acccanaacc ttt 753

<210> 1478
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 1478
aaacctatac tcactttccc aaattgaatc actgctcaca ctgctgatga tttagagtgc 60

tgtccggtgg agatcccacc cgaacgtctt atctaatcat gaaactccct agttccttca 120
tgtaacttcc ctgaaaaatc taagtgtttc ataaatttga gagtctgtga cccacttacc 180
ttgcatctca caggtagaca gtatataact aacaaccaaa gactacatat tgtcactgac 240
acacacgtta taatcattta tcatatatat acatacatgc atacactctc aaagcaaata 300
atttttcact tcaaaacagt attgacttgt ataccttgta atttgaaata ttttctttgt 360
taaaatagaa tggtatcaat aaatagacca ttaaccaana aaaaaaaaga aaaaaaaaaa 420
a 421

<210> 1479
<211> 214
<212> DNA
<213> Homo sapien

<400> 1479
ggaaatatat aataaaaatg ttaaccagaa ggtaaacttg agtgtaattg tcagacagac 60
acacttttcc accagtgtat ttgaatttta gaccagtgac cctgttttgt ggcattcatg 120
caaaacatgc tgagggcttt gttcatctgg tcatcgtgtc caaatttcag tcatgtttgt 180
agcaagattt tggaagcatt catatttcct tttt 214

<210> 1480
<211> 434
<212> DNA
<213> Homo sapien

<400> 1480
ggaggccgct tacgtaaagc ccaggggaca ttcaacagcc cctactaccc aggccactac 60
ccacccaaca ttgactgcac atggaacatt gaggtgccca acaaccagca tgtgaaggtg 120
cgcttcaaat tcttctacct gctggagccc ggcgtgcctg cgggcacctg ccccaaggac 180
tacgtggaga tcaatgggga gaaatactgc ggagagaggt cccagttcgt cgtcaccagc 240
aacagcaaca agatcacagt tcgcttccac tcagatcagt cctacaccga caccggcttc 300
ttagctgaat acctctccta cgactccagt gacccatgcc cggggcagtt cacgtgccgc 360
acggggcggt gtatccggaa ggagctgcgc tgtgatggct gggccgactg caccgaccac 420
agcgatgagc tcaa 434

<210> 1481
<211> 131
<212> DNA
<213> Homo sapien

<400> 1481
aaaatcccca taaatctttt ctgtcctgag gtagttgcaa aataaatcat aacttggata 60
tcaactagag ctgaggcttt gactttttac tcattaaaac tagttgttac aggaactacc 120
tttagatatt t 131

<210> 1482
<211> 324
<212> DNA
<213> Homo sapien

<400> 1482
tgctcgctcc tcagaggctg aaaacatgag aagctaggtg tggtgaaacc aaagcagctt 60
tattgttcaa atgctaaaga cgggaggatg gactggctca agccttaaag aaaccatctc 120
gactttttga actcagtgaa cgggtttaag gaaaacgtgg gaaatatgca aaggtggtgc 180
aggagggtgc aggtctgtgt gtcttattcc catggatatc ttgagtaatc gcttgtccag 240

aggtggggtt tgtgtcatcc tgaattcaac ccagcaatgg tagggtactg ttcataactc 300
accctaagcc agaagattcc tcag 324

<210> 1483
<211> 393
<212> DNA
<213> Homo sapien

<400> 1483
atgtttaatg aatgatacag gatacatccc tgttggaagc ttgcaaaaga cacatacact 60
gtggtacata tttgatttaa tagaagttgt ttatcaggct atatatatat ttgcccaaac 120
atgcaccaca ggataaaata actatttaca taacataggg tatttaattg acatagacta 180
tcagctttgc tgagagcaga agatggcaaa gcaatactgc agcagaaagt ggaacaacta 240
ttctaaagca atactttaga tatatttttc tagaatggat ttattagatt actttttgga 300
aagcatttga cctaaattaa atatagagct ctgaaactta gaataaaatt tgcacttgct 360
gaaacagaat actttgcata aaaataatcc ttt 393

<210> 1484
<211> 323
<212> DNA
<213> Homo sapien

<400> 1484
tttagatcag aaagtttgag gtcttcatca gcagacactc gtgcttctat ttttcttgtt 60
ttatcgaaca gttctgaaac tttgagaaaa aacttgcata tatctgtaga atcctgagtt 120
cctaaagcat ataatgaaga accaattcta ttgtaatcat ctgcagcact tttgtgggat 180
cttgtcattc tatcagattt agcagatgca tccttaactc ggttatgata ttccaaaaga 240
aatgttcgtt cgtgctcaaa gaaatcatct acatccttta ctcctgaaac gattactcca 300
tctgctgatt taaccatgtt ttt 323

<210> 1485
<211> 405
<212> DNA
<213> Homo sapien

<400> 1485
aggagcgtca ggaaaacacg ggcagcctgg gctctgaccc gagccactcc aactccacgg 60
ccacgcagga agaagacgag gaggaggagg agagttttgg gaccctctct gacaaatact 120
cctcccggag actattccgc aaatccgcag cccagttcca taacctgcgg tttggggaac 180
ggagagatga gcaaatggaa ccggagccca aattatggcg aggccggaga aacaccccgt 240
actggtactt cttgcagtgc aaacacctga tcaaggaagg gaagctggtt gaagccctgg 300
acctgtttga gaggcagatg ctgaaggagg agcgattgca gcccatggag agcaactaca 360
cggtgctgat tggggctgc gggcgggttg gctacctgaa gaagg 405

<210> 1486
<211> 230
<212> DNA
<213> Homo sapien

<400> 1486
aaaaatatgt ggattgtgct tgacgtagca aatttcttct atctgcaaaa gcccttttct 60
cactacctca tatacacccc tttgatatgg caccatgttt gaaattggag cgtacacaca 120
tagtcattgg atttactggg attctctttg tgacaagtag gagccaaggg gtcatgcagg 180
gaagcgaacg tgcccgataa ggatttcctt gttgccagag tgtttagcag 230

<210> 1487
<211> 273
<212> DNA
<213> Homo sapien

<400> 1487
tttccactct gcacattgta gagggaacac tctgtaggcc catgggtccc ttactagaga 60
ggttgagtga atttgccttc agttaacatg ggaccttctg tttagcttcc tcttgcttcc 120
caaagatttt aagcattttg taaatgtata aactcacctc tggtaacagt ggcccagacg 180
ctgctttgtg ctaaaagcat gggaaatgta aaggcagtct ttctctggga aatggatgct 240
attctattct gctgccccta cctgttcctg agg 273

<210> 1488
<211> 452
<212> DNA
<213> Homo sapien

<400> 1488
cctactgtgc cccgtaggca aagctctgaa gatttcatcg aaaaatctgc tgtcaatacg 60
tagaaaagtt cactatttca gtttcacagc aaaaaaggtg gggggagggg ggaacccaat 120
agatatttaa gtagatgctt tccaatccca ttcactgcat taattagctt acctcttata 180
cagtacaaca taaacattgc atgtttattt gtatgtaaca cctataagca tatagcatct 240
acattttaag tgtatttaca aattcaacaa aatatctaca tataaaaagc tttacttaaa 300
attaaacttg atgcaagtta tgagaaacca atttattggc aaatgaaact gagcattcct 360
tcaaccatag gttgttatag attttcatat ttggaggtaa cccatttgat agatattgtt 420
tatgaatacg atagaatata tatttacttt tt 452

<210> 1489
<211> 653
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(653)
<223> n = A,T,C or G

<400> 1489
cctgctcttc tcttcaaagc acttagtaca cagggktaca ggtgctacca cttggattcc 60
ccagagcatg gaagtctgat cccaggttga acatatttct tctgaaaatg agcatcttgg 120
ttctatagat tcttatcttg ctcacaggac ttgctccaaa actgaatttt cagaagcagc 180
atgataggga aagagatatt caactctgac agacaaggta gatcgaagca cccacactaa 240
tttctttcag gtgccccatg aggaagactg catcatgtca cttccactca cttggggaga 300
ttctaggact gagacacaaa gttcccccag agtttctgct aatggaaggg gaaacaggtg 360
gtttggaatg gaaaggtgga accaggtcca caaaatgtgc tccctctgct caagactgac 420
tttggctttc ccaggtcccc acttgacttt catataagct gagatgacct attacgggaa 480
aaattaggga acacctaata aaaccaactt tcaaaaactc ctatttatca tggatgtgcc 540
acgatcgaga gaatcnaaca cnaactgnct gtnagagagg ccttcattnt gnctcatctt 600
gagctaaaat cctgrcttgg gatgccagaa ancatgnccc tcttntcggt ttg 653

<210> 1490
<211> 363
<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(363)
<223> n = A,T,C or G

<400> 1490
taacctgaca aaataaaact tagtaaaatc takaactgtt tcttggccta cttgagagga 60
acttccatat tttcacagcc atctccgaaa gcagcagttg ctgtaaatta actgagactt 120
ggaaatggtg cagactgtct tggtagagct gttcttatag cacaatttta tctggaaaat 180
aaacttgtaa atgcgtgctg tatattaata catgtgtgcc catatttatt tttattatct 240
cctgccagtc tttgctcaat gggagatgac agaccaactt ctcaacgtga tttccccatt 300
tcattgaatg agatttatat gccacttatg aaaaaaaata ctgctgngaa agaaatgtac 360
ttt 363

<210> 1491
<211> 163
<212> DNA
<213> Homo sapien

<400> 1491
taatcagccc ctaatttctc catgtttaca cttcaatctg caggcttctt aaagtgacag 60
tatcccttaa cctgccacca gtgtccaccc tccggccccc gtcttgtaaa aaggggagga 120
gaattagcca aacactgtaa gcttttaaga aaaacaaagt ttt 163

<210> 1492
<211> 184
<212> DNA
<213> Homo sapien

<400> 1492
yattccccag gggaaaaatt gaaagtcaaa ctattcacca agagaatgca ttgtctttgc 60
aaatgagcct aagaatcaga ctttttataa atacatgttc aagtttcttg tggttctaaa 120
tggacactga gaactgaaac tgtctacacc aagtttacaa tctatattaa ctatcattwt 180
acag 184

<210> 1493
<211> 273
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(273)
<223> n = A,T,C or G

<400> 1493
aggtaawttg tgatatttag tgcacattta cgtgtaggnc crtcttkaat ggtaaagaca 60
gatacaagcc tatggcacac ttctccaaag caagctatac ttgagagcca attcccaaat 120
aagacagcag agatctgatt aaatgcaact gtgcaaacat tcaacagaca tgttgaatgt 180
aagacaaatt atgattactg ataatatgca aatgtggtct ataaatttat gaatgtgact 240
tccaagggga atatggtatg gaagcccatt ttt 273

<210> 1494
<211> 343
<212> DNA
<213> Homo sapien

<400> 1494
ttggaaagcc tatcactttc tctcttcatt ctccagcccc cacaccaagc acacagagct 60
tttcagtgct ttactcttaa tggagaacat aaccagggat tatcaggtat tccaacatga 120
aaaagaaagt ccaatagaaa caagcaggat aatcaaacca ggaggaagca gagactatat 180
agagaaagaa aaaaagacac atgggaataa cggcaataat actgacaata cacctcacca 240
taaacttatc agaatgaatt tgttggagaa atatatggag gggaggtact tgtgtgtgtg 300
cacaggcact catgtacacg tgtgtatgtg tatgtttttt taa 343

<210> 1495
<211> 378
<212> DNA
<213> Homo sapien

<400> 1495
tagcattctt ccagccactc tggcgtcact atgtgcttca cgacagaaat cgccgtcagg 60
aacttcacgg tgcgagtcac tttgctggca atgaggtgtg tgcacttctg tgcagactcc 120
gcaacctctc caccaagaat gtagagcttc ttaatatact gttgaacctg gacaggctcg 180
aatccagtga aaagcacaaa aggggtcaat tctggagtta gctttttagt gggaggtggt 240
acgtcttcaa ttctggctct tttggaagaa ggctggacat tagctacttc attctgtttc 300
agtttgggag gtagtcttat actcatcaac aactctgcag acacttttaa gggaactctc 360
caagcatcta aaagattt 378

<210> 1496
<211> 181
<212> DNA
<213> Homo sapien

<400> 1496
tggagaagga agttttcctg aagagccaga atccttgcta agtcatttag atccaactga 60
ccatctttat ttctgtcaaa aatcttcatc atggtgccag tgtattcttc cagtttagcc 120
tcagaaatgg cctttttgtg gtgaagaaag aggtctcgga ggaagttgcg gagctcagca 180
g 181

<210> 1497
<211> 373
<212> DNA
<213> Homo sapien

<400> 1497
tggaagctga tccaccttga gatcaagccg gccatccgga accagatcat ccgcgagctg 60
caggtcctgc acgaatgcaa ctcgccgtac atcgtgggct tctacggggc cttctacagt 120
gacggggaga tcagcatttg catggaacac atggacggcg gctccctgga ccaggtgctg 180
aaagaggcca agaggattcc cgaggagatc ctggggaaag tcagcatcgc ggttctccgg 240
ggcttggcgt acctccgaga gaagcaccag atcatgcacc gagatgtgaa gccctccaac 300
atcctcgtga actctagagg ggagatcaag ctgtgtgact tcggggtgag cggccagctc 360
atcgactcca tgg 373

<210> 1498
<211> 337

<212> DNA
<213> Homo sapien

<400> 1498
gctcttgtag tgcttttctt ttaagggaga tgtagtaaaa gggaaaatgt agctcttagt 60
ttacacttca aagatgtggg ggtctttcag agaactaaga ataacagttt tatgtgcaga 120
gagagtttgc cagatctgaa gcatatacct cattgactag gctgttactt tgggataggt 180
tgcagtacca gccacagcca gcagatagag gaaaagacac acataaactc gcttctgagc 240
gtccacttct gcactctctg ctctgctgtt actcagcccc tgagtctgac tcatctctgc 300
acaacctctc tgtgccatga agataagtct tccatgg 337

<210> 1499
<211> 314
<212> DNA
<213> Homo sapien

<400> 1499
catgcggagg gactttagca tggctgataa ggtccttcct accattccaa aagaacagag 60
gaccagagtt gcacactttt tggaaaggca gggcttcaag cagcaagctc ttacagtatc 120
cacagatcct gagcatcgtt ttgagcttgc tcttcagctt ggagagttaa aaattgcata 180
ccagttagca gtggaagcag agtcagaaca gaagtggaaa caacttgctg aacttgccat 240
tagtaaatgt cagtttggcc tagcccagga gtgcctgcat catgcacagg attatggggg 300
cctgctgctt ttgg 314

<210> 1500
<211> 321
<212> DNA
<213> Homo sapien

<400> 1500
cctgaaacct ggtgggaaga tgattgaaag tgttttagat tcaacagatt gactatgtat 60
gacttatcta ttaaaatgaa gaacttccat ggtttaatag aatgaatgct gtattcaaca 120
aggtcttcca tccttcttat aaatcttaag actgtgttta agctttcttt cacttttact 180
ctatcccttg gaagttaatt gggaataaaa agatttatca atttagtcac tataatttaa 240
ggccaggcat ctgcttggaa atacaataac cacaattaat acttagagaa aattgtttca 300
acagattaac tctgctattt t 321

<210> 1501
<211> 557
<212> DNA
<213> Homo sapien

<400> 1501
ctgctctggg gaaaatggtg gaggagccag gcagagagga ggagcagagt gctggcagtg 60
gaaagcctag ctgagactgg agatgccccc ctgcccaaag catctcagcg aggatgcttc 120
tccatatggg tgagccagcc tagagacaga acaggggaag ccagcgggtg ctgcagcgac 180
ccaccgcccc agaacatctg catcttacat caacaaaggt ttatttctca ttaatatcca 240
ttgtgggttg gctgccactc taaccctcgt tgcctctcca tctgggtctt gggtggcaga 300
gcagcctgtc tctgtggcag aggaaaagag agcactgggc agcacaggct gactctcaaa 360
ttttccgcct gaaggtgacc caagtcactg ctcacatttc attgactaaa gcaaaatcct 420
atgcctgtgg gtgagttgag caacgtgatg aggtgttaac ttcctacagg gaggggctca 480
aatattgccc aacagtggta tggcccactg cctggggtgg tcggtggaag gctggcagga 540
caagggagac cacgtgg 557

<210> 1502
<211> 249
<212> DNA
<213> Homo sapien

<400> 1502
cctgcgggga ggcgcgctgc aagaacctgc ccggctccta ctcctgcctc tgtgacgagg 60
gctttgcgta cagctcccag gagaaggctt gccgagatgt ggacgagtgt ctgcagggcc 120
gctgtgagca ggtctgcgtg aactccccag ggagctacac ctgccactgt gacgggcgtg 180
ggggcctcaa gctgtcccag gacatggaca cctgtgagga catcttgccg tgcgtgccct 240
tcagcgtgg 249

<210> 1503
<211> 302
<212> DNA
<213> Homo sapien

<400> 1503
ccaggacctc ttttgggcat ttcttcctaa gtggaataca caacagataa gggagtaggg 60
gaggtaatac agggaagcta ctctttccag ctcagaagga gttgatgaag cccatatatg 120
cattcaagaa gcccatggga tcctctagct gtggatagtg gctaatgtgg tcatccagaa 180
tcgacactgt ggaccgcggc agcgttttcc tgtacagctc caaaaactct ggatagggat 240
ttacaggatc caatggccca tagataaaat gaatggggat agttacagag gcaagagctc 300
cc 302

<210> 1504
<211> 430
<212> DNA
<213> Homo sapien

<400> 1504
ccacgatatc aactatttgg ctttgtcagg tgttctctca aaaattggca gaagtggtga 60
gaatccgtat gccccgctga atctcctggc tgactttgct ggtggtggcc ttatgtgtgc 120
actgggcatt ataatggctc tttttgaccg cacacgcact ggcaagggtc aggtcattga 180
tgcaaatatg gtggaaggaa cagcatattt aagttctttt ctgtggaaaa ctcagaaatt 240
gagtctgtgg gaagcacctc gaggacagaa catgttggat ggtggagcac ctttctatac 300
gacttacagg acagcagatg gggaattcat ggctgttgga gcaatagaac cccagttcta 360
cgagctgctg atcaaaggac ttggactaaa gtctgatgaa cttcccaatc agatgagcat 420
ggatgattgg 430

<210> 1505
<211> 164
<212> DNA
<213> Homo sapien

<400> 1505
ccagtcacct tcaccttcta actaactagc ctccggatga ggtggctgcc accaggcccg 60
aatgatcccc aggagcccag cttccaaacc ccaacatcga atcaaacatc tccatcccca 120
agtgcagtaa cacacaaaaa ccaaacactc tgccctggga aagg 164

<210> 1506
<211> 189
<212> DNA
<213> Homo sapien

<400> 1506
aaaagtcata agggttttat tttgtatcat caaaatattc tataaggtcc caaatactct 60
ttttcaaccc atgaacagta agaatttgtg aattctgata atgaaaaaag ttttcctcca 120
ggtatgtttg tttcacattc agtcctaaag ccttgagcta tgtgtacttc cctcacacag 180
gaacaccag 189

<210> 1507
<211> 268
<212> DNA
<213> Homo sapien

<400> 1507
ctgcacagag gggcacggaa ctccaaatcc tggaatgcgg gtcaataatg tgaattctgg 60
ccctgaccgc cagacacaca gcaagcctga gtcatctgcc gtcaccatgt cagccacaca 120
atcctgtccc tgggcaggct cggtggcaat gtctgtgatt ggcatctggt gcccagccag 180
ctcctcgctc agtacaatgt tgggaccctt tgctgggatg tcaaacacca gcacccggcc 240
tgaccacgtt cccacacaga tgaagtgg 268

<210> 1508
<211> 159
<212> DNA
<213> Homo sapien

<400> 1508
aaagatggca aggcaataaa tgtgttcgta agtgccaacc gactaattca tcaaaccaac 60
ttaatacttc agaccttcaa aactgtggcc tgaaagttgt atatgttaag agatgtactt 120
ctcagtggca gtattgaact gcctttatct gtaaatttt 159

<210> 1509
<211> 234
<212> DNA
<213> Homo sapien

<400> 1509
ccattgtgga gtacattatg aacacaatgt gcttgykaag tcttctctct cattttcaga 60
cagcaattgt taagagtcac acacacgtcc cagacctaag cagcaactcc agtgaatggt 120
actcagacac actcacggga cagcacagaa cttgattctt ctttgtctgt tgcccaaaga 180
acctgttctt tgagtctgtt ccaggtgact tgtaatgata cctcttacgg tttt 234

<210> 1510
<211> 437
<212> DNA
<213> Homo sapien

<400> 1510
aaagcagtac atcttaatat gaagacagga atttctatga tgcttacgaa cattagactc 60
aacatttttg cagcccctt tcctggtcta cattcacaca aacatgagac acagtcccaa 120
gggagaaaca gatgctggag gagcatttag ggccagagtg gaggcacaga ggaagctggg 180
atttttcaac tacccctcc ttggttactc ctgggattcc cttaggattt cacggcacaa 240
ccagcgaaga gtttgctcag attcacttcg gagtagccac ttcgggacaa gaattgctct 300
gctgtgttct tgagttttct gtagtcctgc agaactttgg gggtaaaaaa ttgcttcttc 360
aatttatctt tctcatgatc ggtagtaagt ttctccagtg cacactccgc atcaaaaatg 420
taccggtaaa agcacag 437

<210> 1511
<211> 94
<212> DNA
<213> Homo sapien

<400> 1511
tgtgaagatg gagtctgagg ggggtgcaga tgactctgct gaggaggggg acctactgga 60
tgatgatgat aatgaagatc ggggggatga ccag 94

<210> 1512
<211> 493
<212> DNA
<213> Homo sapien

<400> 1512
aaaaatatgc attacaactg gagttttcca ctgagaataa gagtttggtt ttgacctcmc 60
ataaatccaa gggttcttga aaaaaaagtt aatataaatt ctcaataact atatcattaa 120
taccttatgt atacatagga gtttatataa tgcatttaag taacaaagaa tgtaacattt 180
attagccacc aagtaattag gagatagcat caattatatt gaaagaagat gagtttagat 240
gcttatagtc aagggagtta attgaaattg aaagctattg taggtggtta ctactattat 300
tatcaaacct gaaagttgga acatgtgaac ttgatccttt gcacacataa aagttcacaa 360
agctgctttt aatttgcctt tgttctgtag tactgcttgg tgaatcatgc actagtttgt 420
tgtaaaattc atgtaaactt ttatgtatac aaatgtcaga tcaagcacag gttttattaa 480
ttatatatat ttt 493

<210> 1513
<211> 510
<212> DNA
<213> Homo sapien

<400> 1513
aaatgaggat tattgatagt actcttggtt tttataccat tcagatcact gaatttataa 60
agtacccatc tagtacttga aaaagtaaag tgttctgcca gatcttaggt atagaggacc 120
ctaacacagt atatcccaag tgcactttct aatgtttctg ggtcctgaag aattaagata 180
caaattaatt ttactccata aacagactgt taattatagg agccttaatt ttttttcat 240
agagatttgt ctaattgcat ctcaaaatta ttctgccctc cttaatttgg gaaggtttgt 300
gttttctctg gaatggtaca tgtcttccat gtatcttttg aactggcaat tgtctattta 360
tcttttattt ttttaagtca gtatggtcta acactggcat gttcagagcc acattatttc 420
tagtccaaaa ttacaagtaa tcaagggtca ttatgggtta ggcattaatg tttctatctg 480
attttgtgca aaagcttcaa attaaaacag 510

<210> 1514
<211> 511
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(511)
<223> n = A,T,C or G

<400> 1514
ctggagatca ggaatagaac ctttccaaga tatcataata ttttctttat aggaacactg 60

agtaatggca agaatatttt gagcttttcc atggttaaga gcgatagtct cagaggctgg 120
agaaaatgtt cattctgctc agtgatccag gagtgtgagg acagtagctt cctttccacg 180
tccacaagac aatgacagat gtgtttcctt ctttgccctt tctagggatc tttctaggga 240
tgttgattct ctcacaatat ttcaatgtcc catttctgtg tttcttctcc ctccaggggc 300
tgatttacga ttacatgagt cttgtcacaa taatttcctc ctttaacatc aaggacaagt 360
tgatcactga gataagagct gatagttcca tttttattca gtctccactt ctgcctgaat 420
tgcccatgtt cagtccatag agctacttta gctccaggtg tggtcccggc cnccatcaca 480
tcaagaactg gtttcactgg gccttggatt a 511

<210> 1515
<211> 176
<212> DNA
<213> Homo sapien

<400> 1515
aaaggggaag gkgaractta aaagtattcc caactagatt atctacacca atacattgga 60
actctatatt ttgctttcat tttgtcttaa aaaaatgaaa tagcaacgct ctatcagtca 120
cacagaggac atgcarattt agcagtattg atattatact ctatcttgtt ggattt 176

<210> 1516
<211> 309
<212> DNA
<213> Homo sapien

<400> 1516
ctggggaaaa ccgtgcatta cctgcccatc ctgttcatcg accagctcag caaccgcgtg 60
aaggacctga tggtcataaa ccgctccacc accgagctgc ccctcaccgt gtcctacgac 120
aaggtctcac tggggcggct gcgcttctgg atccacatgc aggacaccgt gtactccctg 180
cagcagttcg ggttttcaga gaaagatgct gatgaggtga aaggaatttt tgtagatacc 240
aacttatact tcctggcgct gaccttcttt gtcgcagcgt tccatcttct ctttgatttc 300
ctggcctttt 309

<210> 1517
<211> 182
<212> DNA
<213> Homo sapien

<400> 1517
ccaacatcta attttttac tttttaatta tagctgttgt gactgatgtg agatggcatc 60
ttactgtggt ttttgcttgc atttatttat ttgatgatta gtaaggatga gtgtttttc 120
atatacttga gtgtcttctt ttgagaaaat atctgttcat gtcctttgcc ttttcttgat 180
tt 182

<210> 1518
<211> 548
<212> DNA
<213> Homo sapien

<400> 1518
cctgagggag agggaaaagc ggatacccac ctgtgtcgct gtttgcgtgc caagtccagg 60
aacagtccat acagccctgc tgcatcccac gacgctgtca caaagcagga gttcatccga 120
ggccaaggtg ttgtcatgag aatattcgtt aaagtaggga cgctgacttt gttcttgggc 180
agattctctt cctgtggagt atccagcctg tttgcctagt tttcctgttc ttctggggtc 240
tgatctctat ctgttttact gcagtccagt taccaaagtg gtataagtaa aattgaaaga 300

attctaaata ccttttcccc ccacgttagc tgcctcacgt taatgtggtc ttacggtctg 360
caaataagtg ttttgatgat ttggcgactg cagttaccca tactagctct cctaccactc 420
actactgaca gttaattatt atcgaatatc cacccaccca gggtgagtta taagttatac 480
caggtgtttt ggttaataat actaatgcaa ttaatttact ggttactctc tcatcttaaa 540
gtaatcag 548

<210> 1519
<211> 491
<212> DNA
<213> Homo sapien

<400> 1519
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ttcctcttta cagatgtcct actgtgtgcc aagctgaaga agacctctgc agggaagcac 120
cagcagtatg actgtaagtg gtacatcccc ctggccgacc tggtgtttcc atcccccgag 180
gaatctgagg ccagccccca ggtgcacccc ttcccagacc atgagctgga ggacatgaag 240
atgaagatct ctgccctcaa gagtgaaatc cagaaggaga aagccaacaa aggccagagc 300
cgggccatcg agcgcctgaa gaagaagatg tttgagaatg agttcctgct gctgctcaac 360
tcccccacaa tcccgttcag gatccacaat cggaatggaa agagttacct gttcctactt 420
gtcctcggac tacgagaggt cagagtggga gagaagcaat ttcagaaact acagaagaaa 480
ggatcttcag g 491

<210> 1520
<211> 169
<212> DNA
<213> Homo sapien

<400> 1520
ctggtactgt cgatttggaa agctggctgg aaaaaactta ttcatgaagg ggctgatggt 60
gtgggacagg gccaggattc ccagcacgaa gaaatacatg gacagcagga ggttgatgta 120
ctcctgggag aatattttga aaaagaggta gagccccaag agtgtgcag 169

<210> 1521
<211> 293
<212> DNA
<213> Homo sapien

<400> 1521
aggacgacgc tgtcrgargc agggagagca aattaccaca gcttcttggc ccagttctgc 60
ccttctttgc tttgggattg cactgggcca tcagctcatg ccaggctatg ggggcagcca 120
gttggcattg ctccccagac tgaacagaaa cctggccgcc ggatgggacc tcctttggca 180
cagacttgac tgtgtaactg cataaactgc agtagcatca ttgccctaga tgccccagga 240
gacctggcac catgaggatt acagacagtg gaatcttact gtcatctgga cag 293

<210> 1522
<211> 386
<212> DNA
<213> Homo sapien

<400> 1522
ccacgtggga ctttgaagac agcacaacac agtccttccg ctggcatccg ctccgggcca 60
aggcggagaa atacgaagac agcgttcctc agagtaatgg agagctcaca gtccgggcta 120
agctggttct cccttcacgg cccagaaaac tccaagaggc tcaagaaggg acagatcagc 180
catcacttca tggtcaactt tgtttggtag tgctaggagc caagaattta cctgtgcggc 240

cagatggcac cttgaactca tttgttaagg gctgtctcac tctgccagac caacaaaaac 300
tgagactgaa gtcgccagtc ctgaggaagc aggcttgccc ccagtggaaa cactcatttg 360
tcttcagtgg cgtaacccca gctcag 386

<210> 1523
<211> 178
<212> DNA
<213> Homo sapien

<400> 1523
aaaaagccta tcccatactg aattgtggga acctatgaag tgtctcttaa tgtcaattaa 60
aagtaacagt ggctgcagat attgatttct gaaagtacat gagaatttgt ctctaactat 120
ggttgaaaca acaaaaccaa atctgaatca ggtagaggtc taccagacac aaactctg 178

<210> 1524
<211> 319
<212> DNA
<213> Homo sapien

<400> 1524
wycacagcwg aaatggggca ctgaagtgtg gagscacaka atgcgggagg gcagaaccac 60
agacaggagg ctgagattga cctcctgagt gcaagctggt ctccccttca cctcctgcac 120
cctacgcaga tggtgcttac cataggattg ccgtaaaaca gagacacgca ccagcgagaa 180
actttagccc ttagtatccc atcctcagga cagaatcact cttaaacatg ttgaaataca 240
tctgcttaga gcttttctat gtgtctatat aatgtatgca taatatacaa ttagaagcat 300
gtgattttat aacatttttt 319

<210> 1525
<211> 467
<212> DNA
<213> Homo sapien

<400> 1525
ccagactaga cagagatcag gtcatcaggg gagcttccga gcttcagcaa agcccacagg 60
tagctctgcg aactcagaat gctaccctac cttccctgca ggccgctgtt catgtctgga 120
ctcctggggg cgctatttaa tgtttacccc catctccagt gccccctcca aggctgtgca 180
gtgtcttggg gctctcaggg ccaacatcga agagatgggg gccacctctt aacacctggc 240
aacagtctcc cctcatcctg attcctgaca acagacaaaa caccggtttc tagggtttat 300
ctgtttgttt tttgagttga gggttcctca gggccttggc attgctagtg atggtcccct 360
ttgctgtgtg agaacccccct caaccccttc ctcctccctc tggggatgaa gtgggagtat 420
ttggctcccc atttttgaca aaagggctca gtgcagggag gtggagg 467

<210> 1526
<211> 439
<212> DNA
<213> Homo sapien

<400> 1526
aaactgttta ctggagaaaa tcctcgctca tgtccattta ttgttttttt ctgtactgtg 60
atttgtttca agcttaggaa aactagtata ttagagtatg ttctaggaaa ttaaaagatc 120
tggttagagt aaaaagttct ttttaaggtt cttaactaat tttttcacaa ctaagaaaat 180
aaatgaagta ttcttaggct gaaattcatc ttattttatc ataaattaga ttgtaggggc 240
agcctacatt tttgtgtatg tgtttttatt tcttaaatga ttgtgtgagc ctggtgacat 300
tttatggttc ttgtgatcta aactgttttt ccaattcaca tcttttgtcg tgaagtgata 360

ttatactaga gtactgtttg cattgtaaaa atgctttgct ggtgctctgg cattttgtct 420
ttatctcatc acctaattt 439

<210> 1527
<211> 609
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(609)
<223> n = A,T,C or G

<400> 1527
ctggagaact tgggctccat taggtgcaat cgttggagta attagcccat cttttacatt 60
tcttgccaca aaatctcgaa gagctgccat ttcaggttcg gacagtgaat acacatgtcc 120
actgggaata ctgtgtgctc caggtatcat ttctatgtga gggtcaacca ggcggtgatc 180
tgggtagacg tgctcatcta ctggagtgta cacattctgg acatagtaat acctcactgg 240
ttggtaaact ctgtatccat ctactggata atagagtggc ggttgtggtg ctggtggtgg 300
gagcgatggt ggtattggag aatacatccg gcagtggtag cggcagtatt cagaatcaaa 360
gacgatagat cgagtgctcc atgtgatatt gggatcatgt gtgctcagcc agcgaacccc 420
taggacgaca gggaagaatg gagactgagt cacatcaaat gacagcacct ctcggtgatc 480
tcccaggtca actatcaggt cgtgagtttc gtggacaact gggcccgatg ctatggggcg 540
cccatcaatt gcttccacaa gtattggacc cgcccgggcg gncgctcgca agggccgaaa 600
ttccagcac 609

<210> 1528
<211> 393
<212> DNA
<213> Homo sapien

<400> 1528
tgatgtaatg aattcatatt tattgataca gaaaaatatg atataatcca tctaaaaagc 60
aagttacaaa acagtgtaca gtgtaccata gtacctatga acacaattag tgaagtaatt 120
tgcagagcta taataccaaa tcagaaatta ttttggtaat gaatttatga ttttcctcgt 180
tttctgattt tttccatgat ctcatatact ttattctcag aaaacaaaag acaaaacccc 240
acacatacac aaaaataaac gagtaacttc tttacaaccc cagaggctaa gtcagtggga 300
aaagagggaa atgaatggtt atgagcataa acacagggac aaataaaaga agtttggagc 360
acagagaaca attcacaaat cagaagtcat ttt 393

<210> 1529
<211> 143
<212> DNA
<213> Homo sapien

<400> 1529
atccgataga atccagttca atgaccttca gtctttactc tgtgcaactc ttcagaatgt 60
tcttcggaaa gtgcaacatc aagatgcttt gcagatctct gatgtggtta tggcctccct 120
gttaaggatg ttccaaagca cag 143

<210> 1530
<211> 636
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(636)
<223> n = A,T,C or G

<400> 1530
gtggagaagc ggcttggtcg ggggtggtct cgtggggtcc tgcctgttta gtcgctttca 60
gggttcttga gccccttcac gaccgtcacc atggaagtgt caccattgca gcctgtaaat 120
gaaaatatgc aagtcaacaa aataaagaaa aatgaagatg ctaagaaaag actgtctgtt 180
gaaagaatct atcaaaagaa aacacaattg gaacatattt tgctccgccc agacacctac 240
attggttctg tggaattagt gacccagcaa atgtgggttt acgatgaaga tgttggcatt 300
aactataggg aagtcacttt tgttcctggn ttgtacaaaa tctttgatga gattctagtt 360
aatgctgcgg acaacaaaca aagggaccca aaaatgtctt gtattagagt ccaattgatc 420
cggaaaacaa tttaattagt atatggaata atggaaaagg tattcctgtt gttgaacaca 480
aagctgaaaa gatgtatgtc ccmnctctca tatttggaca gctcctaact tctagtaact 540
atgatgatga tgaaaagaaa gggacaggtg gtcsaaatgg ctnttgagcc naattgtgta 600
acatattcag tacccaattt actgngggaa acagcc 636

<210> 1531
<211> 194
<212> DNA
<213> Homo sapien

<400> 1531
aaaaggcaga gcattctttt ttcggcaatt ttgataagca aggtgtagat ttacattttt 60
gtccttgctc ccaacgaaat ggataaacaa aaataactta ccatctactc atggaatgtt 120
gttgtgttag ccagtctgaa ggcccacctt aatttttata taactgtctt tagctcttct 180
tttgacaggg cagg 194

<210> 1532
<211> 300
<212> DNA
<213> Homo sapien

<400> 1532
ccatacaagg taattttgac aggttcctgg gattaggaca tgggcatctt gggaggccac 60
tactggccta ccacaactgg gcagcaaaac tattacaccc tccggtataa tagttttggt 120
gtttcaatga ctgggaggaa aagggttgga attttttgct ttggggtccc tcttaacctt 180
gtatttttaa ggtctgggac tcaccaaccc tccccttcca accagagaaa ctcactgcag 240
tatctccttg aaagtctggt gacgagtctg tctaagtgct ggtgagaggc acaggaccaa 300

<210> 1533
<211> 521
<212> DNA
<213> Homo sapien

<400> 1533
gttcctttgc accctgtaga tgttctagga tagttgatgc atgttactaa attacgtatg 60
caagtctgtg agtgcgtctg aggggacatc gccaaggact gactgagaca cgatgccgag 120
acctcaagcc ctgaggggca gtcccaaaac ccttacagtg aagatgttta ctcattgccc 180
ccacctctgg tccacactag aaagaagctc gccccacctc cacctgtgag atccgtgaat 240
tctcggaatg gcaggggaag ccttgcacta ggttgcagag aagcatcctc cacatcctgt 300
gtcagaaacc ctggtctccg tggcacttgt aactcaccgt gctgtcttct ggtctgtgtg 360

tgttcttcaa gccagctcta ggcttcaggc cgagccaggt tcacactcag aaagatgtct 420
ccccatcccc attcggggct gacgatgggg ggctgatggc tgcccctgcg tggcctgagt 480
cctggtccct ctgaggcagt tgacggggca gtcagatttt t 521

<210> 1534
<211> 181
<212> DNA
<213> Homo sapien

<400> 1534
actcaagaag atgtatttaa tgcttgacaa taagagaaag gaagtagttc acaaaataat 60
agagttgctg aatgtcactg aacttaccca gaatgccctg attaatgatg aactagtgga 120
gtggaagcgg agacagcaga gcgcctgtat tggggggccg cccaatgctt gcttggatca 180
g 181

<210> 1535
<211> 544
<212> DNA
<213> Homo sapien

<400> 1535
aaaataggac actaaatcct actctgaaag gtggtttgat caggactaaa gagaatgtat 60
gtagagtgct ttgtgcaacg aattgtgggg agcttggacc caataaggta gccagaatta 120
cccacaccat catcatcttc accaccatca ttattgttat cgacatattc caatacactt 180
ctgaagggct ggaagagaga aatatgtttg tgcagacagg cggcagcagt atttgatcca 240
ccaccacagc tccaccgctt gggggcagta ctgatccacc tgtgctcccc tccctgcccc 300
agcctggaaa gctaatttca gactcaaaaa aatcaagtac agagcagcgc acccactcca 360
atgagtcatc cccgcccact ctagacaaca gcatgctcat gactcaaact atcttcgtga 420
atggttcaaa atatcaagaa ttggtttcca tagtttcttg actaaccaga cacaaaattt 480
cccctacatg cagagattca tgtctcaact tcaactgtac attaaactca accgggaaac 540
tttt 544

<210> 1536
<211> 591
<212> DNA
<213> Homo sapien

<400> 1536
ctgagttaag atggtaaagc caatattatt ttaggaggaa agaggacgaa ggccaatgaa 60
ccaacatctg cctgctatct ggtgcatcac ccaaggtgac caatggctgg gcacaaataa 120
acttctcttt tgctagccac agagttgctc actgtggcaa gcctgagctg gtcagaacac 180
ctgtgtgtgt gttcctgata cacactaacc acaataagca agtctgcaca catctctatg 240
agccccatgc aaagacaaga cattcccaaa gatcagtcac tagagtgcaa caacgaaatt 300
caagatttga ccaaaacaga ccctgctgcc tcctaaattg ccaattgcct ctcaaaaact 360
tacagaaaaa gggacattat aagaattcat agagggagag aagaaaaagc tgctactcct 420
agtcattagt acaatgtgct gtgttaatta gatacctcta tataaattag aaaaagtgct 480
ttacttgcat gcttcaataa aatgaatact gagtgtcgta gtgttagatc tgtacagata 540
taaatttttt gcagctatat aaaagtgtat aagatgggct tttgccattt t 591

<210> 1537
<211> 341
<212> DNA
<213> Homo sapien

<400> 1537
acttcgggcc tccctctccc tgtgcagacc ggttgaataa atgataaaat tactgtttgt 60
gtcctctgtg aagtctggat taatggaaaa aaggatttgt gaggctagtc ttaggctgta 120
gccaatctgg tgtgcttttt gtgtcttcct gtatggttcc atgataagga ggaatacctt 180
aggatagaat gcaagcctag gaccccataa gcctgttgtt caagccaacc agcaaactgg 240
gcagtaacaa acattgctgc aggtttccat tttgttttac gtccttggga gcttgacctt 300
gtaaccacgt ggcagtacct tcttttggcc tctgccattt t 341

<210> 1538
<211> 363
<212> DNA
<213> Homo sapien

<400> 1538
ggacctgact ttgagtccat cagagacaaa gtgagtgaga tgcacataca gtgtttccag 60
acctgactca gcccatctgt ctgttaggaa actttatgaa gacgcccccc agaattaaac 120
cctaattcaa atgtctcact ctgaatagag accttctgaa ataatcttgg tatagagacc 180
cagacacgtg ccttttgcct taaaataaaa atatttagcc catgttgttt tatgtatctg 240
tctttcagtt agttttgaag gcccgcacgg aaaagtgggg cctgtgcacc tgaaaagaaa 300
tgtgtatgtt atgtggttgt tggtctttcc tactagagtt atcttgataa ttgtgaagag 360
tgg 363

<210> 1539
<211> 371
<212> DNA
<213> Homo sapien

<400> 1539
ctgtgggggt ccttccagag aggagctgag atacgcctac ctggaggggc ccctgggcct 60
ggaggggctc ctcagtgtga ctgggtgaag tgttttcaga ggaccagggt tgaggttggg 120
ggcatctcat ccagaccctg ccggcatctg ccccagaacc caagggcccc tccttcctcc 180
ctcctcaatg gaaatgctgg agatgtcctc agtcaccctc tgagcactca cacatcaccc 240
cttatttgga aatttttctc actctaacct tccttcctgc tgcaccttct gccccatccc 300
caggctctgg cctctctctc tcctcttcta ccctttagca ggtaatgact cagttcccac 360
tgaggagcca g 371

<210> 1540
<211> 403
<212> DNA
<213> Homo sapien

<400> 1540
ctkgacgtga tggagcaggt gagcagtgcc cgtggggctt gccagagggc tgaggaggac 60
cctctctaac cagctccctg tccccttct tctgtagctt gagttgaaga agacactgct 120
ggacaggatg gttcacctgc tgagtcgagg ttatgtactt cctgttgtca gttacatccg 180
aaagtgtctg gagaagctgg acactgacat ttcactcatt cgctattttg tcactgaggt 240
cagcaatgca ccgttggttt catgtttcat actgtttaca ctagcactgc cctttttggc 300
ttaatttagt tcattttgta cctaactgag aactgtgctt tctgatgtag tgatgacaat 360
gacagatact cgtttaccaa aaagcacctt ctgcctgcag cag 403

<210> 1541
<211> 428
<212> DNA
<213> Homo sapien

<400> 1541
taaaacaaaa ctaaagaaga gaaaatatat tctcgtaaat tatctgaact taaaagatgg 60
aagcctggag atagatttgt gataagccat tgctgagtac atcctagagt tcttgataat 120
ttcagttggt taaattacaa tagtttgcta tttcctccct cacattttat gttctacagt 180
atctagctgc ttgggttttc ctgtatacca tggggcttct gtcatctggg ctttactcag 240
tggcatattc cctctgccta aaactctcct cccctctcca ccttagaagt agcttttcct 300
agaacggttt tcccagggtt tcacctaagg tgatagtaca atctacaggg acctgcacat 360
gaagaccttt gcatacatgc caggaagttg gactttatct ttggaaaaag ggagcctttg 420
aaggtttt 428

<210> 1542
<211> 345
<212> DNA
<213> Homo sapien

<400> 1542
awttaaatgc ttagcaagca gcaattccac gatggtcaaa ttcctaatat gagagaagta 60
gaaataggaa aaataggtca ccctgatact tatgttttca ttttgcttaa tatacgtttg 120
tatatttcaa tataacatta atagatatcg tgtcccttca cagttctaaa gtagtaagca 180
aaatgaatta atttaaccta tgcaattaaa accaatttgg aagaatattg aggtagcaca 240
ctgttacggg aattagtatg actcagtaat gcagttgaaa gttagtggct cctaatccag 300
tatgaatcat ggagatgaga gaaatgatta gataaagaga tattt 345

<210> 1543
<211> 420
<212> DNA
<213> Homo sapien

<400> 1543
aatattgaat ttctagaagc agtatattgc ttactgcttc ttaattacgt tatagatgag 60
gtggaaatga taaaaactaa agaagcaaga ttaatcttta acacacattt caggctgttg 120
taaaagaata aacaatgctt catataaact tctagcaaat gacttcctaa tgaggtcttg 180
aaacagtctt tagggcacgg aatgtcatca cataattaag cagctttaag cctttattaa 240
aaggcttaaa gtcgcaaaca atgaaatctg aaacaaactg taccatatta aactttttga 300
tgatatttca aattcagtaa aagaaaaaaa ggatggttca gaataacatc acgtattcta 360
atcctgaaac acataacaaa tgcatctgaa acagcaattc ttaaaaaggt tttgcccttt 420

<210> 1544
<211> 306
<212> DNA
<213> Homo sapien

<400> 1544
ctggcttcac tcctactccc tctctgctcg cagcacgtcg gccgccagct ctttgatgtg 60
ttcccaggcc cgctgcacat gggcagattc caccgtgcga gaacagatgg caaagcgcag 120
gacaaacttg tccctgaggt gacatggaac caagtggatt tttttggcac tgtttattct 180
ttgcagaaga gcttcattca ctttgttgga accctttagc cgaaagcaga caagccccag 240
aatgacttcc acacagattt caaagcgggg atcctggcgc accagtgact caaactcatg 300
ggacag 306

<210> 1545
<211> 110
<212> DNA

<213> Homo sapien

<400> 1545
ctgctccggg ccttcatcct gaagatcagc gtgtgcgatg ccgtcctgga ccacaacccc 60
ccaggctgta ccttcacagt cctggtgcac acgagagaag ccgccactcg 110

<210> 1546
<211> 239
<212> DNA
<213> Homo sapien

<400> 1546
aaagaaatat gacacggtgt tggatattct aagagacttt tttgaactca gacttaaata 60
ttatggatta agaaaagaat ggctcctagg aatgcttggt gctgaatctg ctaaactgaa 120
taatcaggct cgctttatct tagagaaaat agatggcaaa ataatcattg aaaataagcc 180
taagaaagaa ttaattaaag ttctgattca gaggggatat gattcggatc ctgtgaagg 239

<210> 1547
<211> 527
<212> DNA
<213> Homo sapien

<400> 1547
aaaaattcca gttgagattt ttctggttct ctgtataaag attgactgga acatatacat 60
tttggggttt atgtttggag actttggctc ttattcaaac cttccatttt agttggcttc 120
ttctgacagt gcttcagcat ggaagcaagg agggggcctc attactgcca ggtaagggta 180
aaaatctagt ttctctgctg ggtctccatt gtcactaaga aaggaatggc tctgttattg 240
ctgggcaggg ttggctgttc caactgataa tcctatgtct gggagggcta ggagtgcctc 300
cttgctgttc ctcttgttgt ttccactgac agtggagtgg ccttgttact gctgggtggt 360
ggttgagagt tctggctctc tactagggag gacacaacct cagtgtagag aggcggggat 420
accttgttac tgtcaggcac aggcggaggt ccagtctcct tactccacct acccaacagg 480
gtagcttgag gcacttcatt attgcctagt gagagtggaa gtttagg 527

<210> 1548
<211> 333
<212> DNA
<213> Homo sapien

<400> 1548
ctgtgggcgg agctagtagg ggcggggcta cgtgattgac acttctctcc tcagacttca 60
agggctacca ctggacccctt cccctgtctt gaaccctgag ccggcaccat gcacggacgc 120
ctgaaggtga agacgtcaga agagcaggcg gaggccaaaa ggctagagcg agagcagaag 180
ctgaagctat accagtcagc cacccaggcc gtattccaga agcgccaggc tggtgagctg 240
gatgagtccg tgctggaact gacaagccag attctgggag ccaaccctga ttttgccacc 300
ctctggaact gccgacgaga ggtgctccag cag 333

<210> 1549
<211> 438
<212> DNA
<213> Homo sapien

<400> 1549
ttgacagtgt acgctggagc aggttccagg gtggggctgc cctgccgcct gcctgctggt 60
gtggggaccc ggtctttcct cactgccaag tggactcctc ctgggggagg ccctgacctc 120

ctggtgactg gagacaatgg cgactttacc cttcgactag aggatgtgag ccaggcccag 180
gctgggacct acacctgcca tatccatctg caggaacagc agctcaatgc cactgtcaca 240
ttggcaatca tcacagtgac tcccaaatcc tttgggtcac ctggatccct ggggaagctg 300
ctttgtgagg tgactccagt atctggacaa gaacgctttg tgtggagctc tctggacacc 360
ccatcccaga ggagtttctc aggaccttgg ctggaggcac aggaggccca gctcctttcc 420
cagccttggc aatgccag 438

<210> 1550
<211> 204
<212> DNA
<213> Homo sapien

<400> 1550
aaaactaagt tattccaaca ctaaaagcat acaacagcat gccaacagta atatattatt 60
ctccaagact ttacctatgt aagtgttcaa aactctgcag cattaaacaa cgtgtatgca 120
aattgttatg gatacatttc agaatctaag aaatcaggca agtgcttaaa aggccaacgg 180
tccaagggat tacatctgca gttt 204

<210> 1551
<211> 132
<212> DNA
<213> Homo sapien

<400> 1551
ccatctgtgg atttgtctgt gcacctattg gctcttctag ctgactcttc tggttgggct 60
tagagtctgc ctgtttctgc tagctccgtg tttagtccac ttgggtcatc agctctgcca 120
agctgagcct gg 132

<210> 1552
<211> 433
<212> DNA
<213> Homo sapien

<400> 1552
ctgaatagag gtcaacacag ttgcgatgtt gagggatggt ctccaagcac cttttggtgg 60
caatttgaga acatccagac aaatccttcc agcagaatca atgtttggat gataaattgg 120
agtgagaaat cggatctgag gaggttcaaa tgggtacctc tcaggaatga taacttctag 180
cttaaaaaca cctttctcat aaggtgtgtt ggctccacct aatatttgag ctcgcaggtc 240
atccatttgg tctttatctt gccaacatgt gatgcctggg ggtggctctg tggctaacat 300
gtgcagctct ctcttcagac gtgaagctct ctgcatgatc cccaagtaga aggaaccaca 360
cacagttcac tgctccacac taagagctgs ctgggatgca ctgagctgac acccctcaca 420
acgcagcaac gcg 433

<210> 1553
<211> 316
<212> DNA
<213> Homo sapien

<400> 1553
gagcaaggtc tgctgagaac agacccagtc cctgaggaag gagaagatgt tgctgccacg 60
atcagtgcca cagagaccct ctcggaagag gagcaggaag agctaagaag agaacttgca 120
aaggtagaag aagaaatcca gactctgtct caagtgttag cagcaaaaga gaagcatcta 180
gcagagatca agcggaaact tggaatcaat tctctacagg aactaaaaca gaacattgcc 240
aaagggtggc aagacgtgac agcaacatct gcttacaaga agacatctga aaccttatcc 300

caggctggac agaagg 316

<210> 1554
<211> 542
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(542)
<223> n = A,T,C or G

<400> 1554
aaaggaatta ttctggcagc acatgtagta ttcttggatg atcttgctgc tcttatttct 60
ccttttgtgt gtgtgtgtgt gtgtgtggct atgggttttc atttgtaact ccatctgctt 120
argagagtgg gctctctata agggaacctg ctgtaaactt cattgcagca aggatgtaga 180
gagaaatagg acttaattcc actaggggct ctcatctcac accttaagga ggagatttct 240
agaaaaactg ggccagattt tctttgytct ccatcatttt aatgtggcag gctgytcagt 300
tttcttactc ttacctatgw gatatttctt cgtaacgtgt ccaaaaagaa aaaagaccca 360
atcagtgtct cttgactttg ttctttgatc cctcagtttc ttcttgattt cagcatgtgt 420
ccgggttcct aattttgggt atgagttagc aaatttaacc attgtgtttg tgccctaccc 480
aggggactcc ccagtttctg acttgaagta gactganaag aatccacgag gngctatttt 540
gg 542

<210> 1555
<211> 117
<212> DNA
<213> Homo sapien

<400> 1555
ctgtctgtgg cttcccatgt ctttctccaa agttatccag agggttgtga ttttgtctgc 60
ttagtatctc atcaacaaag aaatattatt tgctaattaa aaagttaatc ttcatgg 117

<210> 1556
<211> 111
<212> DNA
<213> Homo sapien

<400> 1556
ctgctgcagc cgcagtttct catccggagt gtaccccgtc atgtcgccgc tggtaccaac 60
gcaaaaggac acggcgcacc ctcgaactac ggactagtta cttaagcgcg c 111

<210> 1557
<211> 454
<212> DNA
<213> Homo sapien

<400> 1557
cgaggactga tcctctagta ctaagtgact ggggatatta caytarccaa cattggttga 60
tacatacctk artmatcatw tgaggaygca gtgataarsg satawwmywg tatsatccya 120
acaygyacta rctcaaaaac tagtgggggc ggattgatct cctgtgggac wkcacatgsc 180
ctgaaagtga acatgmtcmt ratcacctgc agrgcttgag atggyccmca tkgcwgcact 240
ccgccccyac akttttgaw tcwacwggag ttaggswgmt yctwgawtta kcctttctac 300
ctgcctccyg akagrwgcwc wygastwgga kgaatssatt gackkctaag rttakacttc 360

cactaactct gtacgmtgar ctcttactaa tattcgttac cacgctaaga ggctctgctc 420
caggatctca tcgcgactgg aaggaacctc cagc 454

<210> 1558
<211> 404
<212> DNA
<213> Homo sapien

<400> 1558
aaagaagtgc agttgatatc taatttacac agtgaaacta gtgatagaaa ataactaatg 60
aaaaaaaatc agagactggt ttccaattga ttgacaccta gatctgtcag cctctcttaa 120
agaaagggga aggagaaaaa aaatctcatc atggaaggca gacaagagtc cacctgacag 180
aggtggaatc tgatggaatc tgaccccatt tcatgataaa cgagaggaaa cataaatgcc 240
atctcaaata ctaaagcgat gtagtgtagc atgagtgact caatgcaaat tcacagagga 300
aaagaagtta cggcttagga agtaggacaa taaatacaaa tatttcatct tatttaatgg 360
tgcatgactt cagtgaaact accctttgca atgcaataaa tttt 404

<210> 1559
<211> 266
<212> DNA
<213> Homo sapien

<400> 1559
aaactatcag aagagatgag agggaattga tctacaatac tagaatttta tgtgcagaca 60
aatccacatc tggaaatgaa atcacagtaa gatattttcg ggagaccaaa acataaaaat 120
tgctagaata aatttgccac gaacgagtaa ctagacatta gaaattgact acatagatat 180
agtaatacta aaagtgctga aaacaagcaa acacaacaca cacattctca attctttttt 240
tttctatcaa atatcttcaa cttttt 266

<210> 1560
<211> 142
<212> DNA
<213> Homo sapien

<400> 1560
aaaactcagt atcttctgaa ccagaggcat ttctgattag cccttcccta cctattttcc 60
tagtatcact ctttaatcag cttggggagg tggcagcatt tcatggcctc cgtagtaact 120
cacaatgctt cctggggtat tt 142

<210> 1561
<211> 381
<212> DNA
<213> Homo sapien

<400> 1561
aaacactaaa tgaagcttct cacaatttct aattataaac aaaaggctga aaacagtatg 60
ggaaacaaag tttcaaaaca aagaaaagtt gagtaaaagg tgccccctct atggctcatc 120
tgaaagaaac attttactca gagaggcaaa catttctgat ctaggagtaa gtttcccact 180
cactttgcaa ggacccactc attctgcaga aagacctaca agtctttctg gtctcaattg 240
caaagtacgt gaaaatgtgt atgaaagatc taaaagctaa atattagaat aaggctaatt 300
gaaatcaaaa ttgtgtgctg gtctaaatat acatcttcgg cttcttcctt tttagtaagt 360
atttttattt cagatgtatt t 381

<210> 1562

<211> 368
<212> DNA
<213> Homo sapien

<400> 1562
ggagaaagga gaaccgtaca tgagcattca gcctgctgaa gatccagatg attatgatga 60
tggcttttca atgaagcata cagccaccgc ccgtttccag agaaaccacc gcctcatcag 120
tgaaattctt agtgagagtg tggtgccaga cgttcggtca gttgtcacaa cagctagaat 180
gcaggtcctc aaacggcagg tccagtcctt aatggttcat cagcgaaaac tagaagctga 240
acttcttcaa atagaggaac gacaccagga gaagaagagg aaattcctgg aaagcacaga 300
ttcatttaac aatgaactta aaaggttgtg cggtctgaaa gtagaagtgg atatggagaa 360
aattgcag 368

<210> 1563
<211> 411
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(411)
<223> n = A,T,C or G

<400> 1563
accwtrsaac tgcawttatt acctatgcta gntttggata agaamtgkyc wtayatgtga 60
kagcaagagg gcacyaraws wrcttsaaca ccaawgggcm ktactwtata kawmcgawgg 120
gcatgctwtm atgaccaact grmtgactgt ttgagaatgg acaargtgct agcgctaaac 180
ctgtccttct tgaacrtggc ttgactaacg kcwttgatac gttrccttca kkasaatact 240
attactasac tttgktgctt gattaccgac tggtgcactc ttgmtctcac ctatgargac 300
agtgctttac acaaactcrt akggaaaatt gnntttgtmc tgtganctac tcatcygaga 360
nctccctaag ggctaacatt ncatgtttcc gtctcactag ctacacgttc t 411

<210> 1564
<211> 602
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(602)
<223> n = A,T,C or G

<400> 1564
ctagttttaa gatcagagtt cactttcttt ggactctgcc tatattttct tacctgaact 60
tttgcaagtt ttcaggtaaa cctcagctca ggactgctat ttagctcctc ttaagaagat 120
taaaagagaa aaaaaaaggc ccttttaaaa atagtataca cttattttaa gtgaaaagca 180
gagaatttta tttatagcta attttagcta tctgtaacca agatggatgc aaagaggcta 240
gtgcctcaga gagaactgta cggggtttgt gactggaaaa agttacgttc ccattctaat 300
taatgccctt tcttatttaa aaacaaaacc aaatgatatc taagtagttc tcagcaataa 360
taataatgac gataatactt cttttccaca tctcattgtc actgacattt aatggtactg 420
tatattactt aatttattga agattattat ttatgtctta ttaggacact atggttataa 480
actgtgttta agcctacaat cattgatttt tttttgttat gtcacaatca gtatattttc 540

tttggggtta cctctctgaa tattatgtaa acaatccaaa gaaatgattg tattaannat 600
tt 602

<210> 1565
<211> 473
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(473)
<223> n = A,T,C or G

<400> 1565
ctagtccagt gtggtggaat tcatccaggg ggctacccct ggctctctgt tgccagtggt 60
catcatcgca gtgggtgtct tcctcttcct ggtggctttt gtgggctgct gcggggcctg 120
caaggagaac tattgtctta tgatcacgtt tgccatcttt ctgtctctta tcatgttggt 180
ggaggtggcc gcagccattg ctggctatgt gttnagagat aaggtgatgt cagagtttaa 240
taacaacttc cggcagcaga tggagaatta cccgaaaaac aaccacactg nttcnatcct 300
ggacaggatg caggcagatt ttaagtgctg tggggctgct aactncacag attgggagaa 360
aatcccttcc atgtngaaga accgagtccc cgactcctgc tgcattaatg ttactgtggg 420
ctgtgggatt aatttcaacg anaaggcgat ccataaggag ggctgtgtgg aga 473

<210> 1566
<211> 53
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(53)
<223> n = A,T,C or G

<400> 1566
ctagttatta atagnaatca attncggngt cattagttca tagcccatat atg 53

<210> 1567
<211> 136
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(136)
<223> n = A,T,C or G

<400> 1567
ttattgattt ttttttttca ctttccccat cacactcaca cgcacgctca cactttttat 60
ttgccataat gaaccgtcca gcccctgtgg ngatctccta tganaacatg cgttttntga 120
taactnacaa ccctac 136

<210> 1568
<211> 192
<212> DNA

<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(192)
<223> n = A,T,C or G

<400> 1568
ttgngtctgt gtgagnnggt tgaccttcct ccatcccctg gtccttcnct tnccttnccg 60
aggcacagag agacagggca gnatccacgt ncccattntg gaggcagana aaagagaaag 120
tgntttatat acggtactta tttaatatcc ntttntaatt anaaantnaa acagttaatt 180
taattaaaga gt 192

<210> 1569
<211> 575
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(575)
<223> n = A,T,C or G

<400> 1569
ctagttctgt ccccccagga gacctggttg tgtctgtgtg agtggttgac cttcctccat 60
cccctggtcc ttcccttccc ttcccgaggc acagagagac agggcaggat ccacgtgccc 120
attgtggagg cagagaaaag agaaagtgtt ttatatacgg tacttattta atatcccttt 180
ttaattagaa attaaaacag ttaatttaat taaagagtag ggtttttttt cagtattctt 240
ggttaatatt taatttcaac tatttatgag atgtatcttt tgctctctct tgctctctta 300
tttgtaccgg tttttgtata taaaattcat gtttccaatc tctctctccc tgatcggnga 360
cagtcactag cttatcttga acagatattt aattttgcta acactcagct ctgccctccc 420
cgatcccctg gctccccagc acacattcct ttgaaataag gtttcaatat acatctacat 480
actatatata tatttggcaa cttgnatttg ngngtatata tatatatata tgtttatgta 540
tatatgngat tctgataaaa tagacattgc tattc 575

<210> 1570
<211> 392
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

<400> 1570
ctagtccagn gtggtggaat tccgccgcca tcatgggtcg catgcatgct cccgggaagg 60
gcctgtccca gtcggcttta ccctatcgac gcagcgtccc cacttggttg aagntgacat 120
ctgacgacgt gaaggagcag atttacaaac tggccaagaa gggccttact ccttcacaga 180
tcggtgtaat cctgagagat tcacatggtg ttgcacaagt acgttttgtg acaggcaata 240
aaattttaag aattcttaag tctaagggac ttgctcctga tcttcctgaa gatctctacc 300
atttaattaa gaaagcagtt gctgttcgaa agcatcttga gaggaacaga aaggataagg 360
atgctaaatt ccgnctgatt ctaatagaga gc 392

<210> 1571
<211> 390
<212> DNA
<213> Homo sapiens

<400> 1571
gaaggacgtt tgtgttggaa gccctggtat ccccggcact cctggatccc acggcctgcc 60
aggcagggac gggagagatg gtgtcaaagg agaccctggc cctccgggcc ccatgggtcc 120
acctggagaa atgccatgtc ctcctggaaa tgatgggctg cctggagccc ctggtatccc 180
tggagagtgt ggagagaagg gggagcctgg cgagaggggc cctccagggc ttccagctca 240
tctagatgag gagctccaag ccacactcca cgactttaga catcaaatcc tgcagacaag 300
gggagccctc agtctgcagg gctccataat gacagtagga gagaaggtct tctccagcaa 360
tgggcagtcc atcacttttg atgccattca 390

<210> 1572
<211> 383
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(383)
<223> n = A,T,C or G

<400> 1572
ctgcagcttc tgctgctgag gccgggattg ctacgactgg gactgaaggt gaaagaggtg 60
gaatccgaag tcctgggact gcgggatgct aaacattgaa agctgggtgt aggcactgca 120
gggagagtgt ggaggtctga cagggtagga atatgtggga gggctgggct aggaatggcc 180
ttggaggctg gcctgtgtgg atatggcacc aattctaccc tgctcctctt ttccttttcc 240
cagactcaga cgatgccctg ctgaagatga ccatcagcca gcaagagttt ggccgcactg 300
ggcttcctga cctaagcagt atgactgagg aagagcagat tgcttatgcc atgcagatgt 360
ccctgcangg gagcagagtt tgg 383

<210> 1573
<211> 149
<212> DNA
<213> Homo sapiens

<400> 1573
cctccagagc ctctctagtg gcagagcagc tcacactccc tccgctggga acgatggctt 60
ctgcctagta cctatccttg tgtttctgat gcagtggtag cattggttca agttctctcc 120
tgctgtggtc agagttgctt cgatgttgg 149

<210> 1574
<211> 143
<212> DNA
<213> Homo sapiens

<400> 1574
ctgccaggct gaaaagaagc ctcagctccc acaccgccct cctcaccgcc cttcctcggg 60
agtcacttcc actggtggac cacgggcccc cagccctgtg tcggccttgt ctgtctcagc 120
tcaaccacag tctgacacca gag 143

<210> 1575

<211> 112
<212> DNA
<213> Homo sapiens

<400> 1575
ctgcatccac cctctttcag ggggtagagc cactatactt ctcatgtaga tcagccacat 60
tgtcactgga gactcggatc cagccatcct cccgcacgtg gtagaggttg ac 112

<210> 1576
<211> 198
<212> DNA
<213> Homo sapiens

<400> 1576
ccagtatgtc cccaggatta tgtttgttga cccatctctg acagttagag ccgatatcac 60
tggaagatat tcaaatcgtc tctatgctta cgaacctgca gatacagctc tgttgcttga 120
caacatgaag aaagctctca agttgctgaa gactgaattg taaagaaaaa aaatctccag 180
gcccttctgt ctgtcagg 198

<210> 1577
<211> 444
<212> DNA
<213> Homo sapiens

<400> 1577
cctgcctgga gccccagatc accccttcct actacaccac ttctgacgct gtcatttcca 60
ctgagaccgt cttcattgtg gagatctccc tgacatgcaa gaacagggtc cagaacatgg 120
ctctctatgc tgacgtcggt ggaaaacaat tccctgtcac tcgaggccag gatgtggggc 180
gtcatcaggt gtcctggagc ctggaccaca agagcgccca cgcaggcacc tatgaggtta 240
gattcttcga cgaggagtcc tacagcctcc tcaggaaggc tcagaggaat aacgaggaca 300
tttccatcat cccgcctctg tttacagtca gcgtggacca tcggggcact tggaacgggc 360
cctgggtgtc cactgaggtg ctggctgcgg cgatcggcct tgtgatctac tacttggcct 420
tcagtgcgaa gagccacatc cagg 444

<210> 1578
<211> 294
<212> DNA
<213> Homo sapiens

<400> 1578
ccacaaagcc attgtatgta gctttagctc agcgcaaaga agagcgccag gctcacctca 60
ctaaccagta tatgcagaga atggcaagtg tacgagctgt gcccaaccct gtaatcaacc 120
cctaccagcc agcacctcct tcaggttact tcatggcagc tatcccacag actcagaacc 180
gtgctgcata ctatcctcct agccaaattg ctcaactaag accaagtccc cgctggactg 240
ctcagggtgc cagacctcat ccattccaaa atatgcccgg tgctatccgc ccag 294

<210> 1579
<211> 295
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(295)

<223> n = A,T,C or G

<400> 1579
ccacaaagcc attgtatgta gctttagctc agcgcaaaga agagcgccag gctcacctca 60
ctaaccagta tatgcagaga atggcaagtg tacgagctgt gcccaaccct gtaatcaacc 120
cctaccagcc agcacctcct tcaggttact tcatggcagc tatcccacag actcanaacc 180
nngctgcata ctatcctcct agccaaattg ctcaactaag accaagtccc cgctggactg 240
ctcagggngc cagacctcat ccattccaaa aatatgcccg gtgctatccg cccag 295

<210> 1580
<211> 166
<212> DNA
<213> Homo sapiens

<400> 1580
cttctttatt ggggacatgt gggctggaac agcagatttc agctacatat atgaacaaat 60
cctttattat tattataatt atttttttgc gtgaaagtgt tacatattct ttcacttgta 120
tgtacagaga ggtttttctg aatatttatt ttaagggtta aatcac 166

<210> 1581
<211> 449
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(449)
<223> n = A,T,C or G

<400> 1581
ctgaggcaac agaataaatg cagaggcatt acaatgaatc ccacttaata taaagaacta 60
tacagaccaa cacttctcta caaaattttt ttttcctcat tgccagttaa atacagagtt 120
ttactttcat agcttaacaa tgaagggtca tacactgaag ccaatacata tacctagcat 180
ttcagtctaa gcttgtccac gtacatagct gaagtcaatt acaaggtttg gcctagaaat 240
gctaggggaa cttctttgta gtttttacag gtattaaact tcatcttgca cactgaagtc 300
atcatacata cagggcaaaa tcagagcttt tatatttgcg tttattcttc atttaacttt 360
ttataacact actatagttt attaaaacaa aaaacaaaga gcaagtagtg agcatattan 420
gattacagtc ctttcactca ttcacacct 449

<210> 1582
<211> 302
<212> DNA
<213> Homo sapiens

<400> 1582
ccaatgggct ttgctgtagc ttgctgaaat caccaagcag gagagattta accagaggcg 60
atgtgtccag tcaccagcat agagccatcc tctgtgtcac catccacacg cagggccttc 120
tggcagacct catgcaatgc cctccatgtt aatattcatc agaaaatgga taattagggg 180
ggccagcaaa aatatcaagg gtcaaatatc gcacatttct gtttaggcca tctatggctt 240
tcatctcctc tgaagtcaac tggaattcaa acacctgcac gttctgtctg atgcgctgct 300
ca 302

<210> 1583
<211> 170

<212> DNA
<213> Homo sapiens

<400> 1583
ttcctgctcc gtgggaacca cgagtgtgcc agcatcaacc gcatctatgg tttctacgat 60
gagtgcaaga gacgctacaa catcaaactg tggaaaacct tcactgactg cttcaactgc 120
ctgcccatcg cggccatagt ggacgaaaag atcttctgct gccacggagg 170

<210> 1584
<211> 368
<212> DNA
<213> Homo sapiens

<400> 1584
ccagacgtgg tggctcacac ctgcagtccc agcaccttag gaggccgagg caggaggatc 60
cttgaggtca ggagttcgag accagcctcg ccaacatggt gaaaccccat ttctactaaa 120
aatacaaaaa attagccaag tgtggtggca tatgcctgta atcccaacta ctcagaaggc 180
cgaggcagga gaattacttg aacgcaggag aatcactgca gcccaggagg cagaggttgc 240
agtgagccga gattgcacca ctgcactcca gcctgggtga cagagcaaga ctccatctca 300
gtaaataaat aaataaataa aaagcgctgc agtagctgtg gcctcaccct gaagtcagcg 360
ggcccagg 368

<210> 1585
<211> 392
<212> DNA
<213> Homo sapiens

<400> 1585
caaccctctc tcctcagcgc ttcttctttc ttggtttgat cctgactgct gtcatggcgt 60
gccctctgga gaaggccctg gatgtgatgg tgtccacctt ccacaagtac tcgggcaaag 120
agggtgacaa gttcaagctc aacaagtcag aactaaagga gctgctgacc cgggagctgc 180
ccagcttctt ggggaaaagg acagatgaag ctgctttcca gaagctgatg agcaacttgg 240
acagcaacag ggacaacgag gtggacttct aagagtactg tgtcttcctg tcctgcatcg 300
ccatgatgtg taacgaattc tttgaaggct tcccagataa gcagcccagg aagaaatgaa 360
aactcctctg atgtggttgg ggggtctgcc ag 392

<210> 1586
<211> 158
<212> DNA
<213> Homo sapiens

<400> 1586
cctccactgc cagcctatgg ttgttcgcca ccaagccagg agtgctgcac cgcccagtgg 60
tccccctcgg gctccaggcc cccactgaga ccctctcgga ggcagaagca cttcacccct 120
cagagtccta caagtccaac cagtggacct ggaattgg 158

<210> 1587
<211> 85
<212> DNA
<213> Homo sapiens

<400> 1587
ccaatgtaca tggtggacta tgccggcctg aacgtgcagc tcccgggacc tcttaattac 60
tagacctcag tactgaatca ggacc 85

<210> 1588
<211> 369
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(369)
<223> n = A,T,C or G

<400> 1588
ccaggctacc ttcccactgg agacaggcag ggggacaggt gctaagggac ctggcaggca 60
gggctggcag gccccatggc gcctgttcca gcagatgaca agcccaggtc agggtagagc 120
gggcaggagg ggggacgagg gctcccacaa catgattttg tgtaaaatat ggcagcgaca 180
cacgctcagg gccgggaggt ggggttagg gtggggacgg cggcaacatc gtgtaaaaaa 240
gtgtcccagt tcccatagca aagagagctg tgaccgggtg ttcagagctt ctccagtaca 300
agggggaaag ccgcccggcg ggggcggcgg gcagggacat catttggttt cctggtgctg 360
tcngtccga 369

<210> 1589
<211> 361
<212> DNA
<213> Homo sapiens

<400> 1589
ctgtagcttc tgtgggactt ccactgctca ggcgtcaggc tcagatagct gctggccgcg 60
tacttgttgt tgctttgttt ggagggtgtg gtggtctcca ctcccgcctt gacggggctg 120
ctatctgcct tccaggccac tgtcacggct cccgggtaga agtcacttat gagacacacc 180
agtgtggcct tgttggcttg aagctcctca gaggagggcg ggaacagagt gaccgagggg 240
gcagccttgg gctgacccag gacggtcagc ttggtccctc cgccgaacag tacaaaggga 300
ctcaggctgt tatcatagga ctggcagtaa taatcagcct catcttcagc ctggagccca 360
g 361

<210> 1590
<211> 434
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(434)
<223> n = A,T,C or G

<400> 1590
ctggagaagg tgtgcagggg aaaccctgct gatgtcaccg aggccaggtt gtctttctac 60
tcgggacact cttcctttgg gatgtactgc atggtgttct tggtgctgta tgtgcaggca 120
cgactctgtt ggaagtgggc acggctgctg cgacccacag tccagttctt cctggtggcc 180
tttgccctct acgtgggcta cacccgcgtg tctgattaca aacaccactg gagcgatgtc 240
cttgttggcc tcctgcaggg ggcactggtg gctgccctca ctgtctgcta catctcagac 300
ttcttcaaag cccgaccccc acagcactgt ctgaaggagg aggagctgga acggaagccc 360
agcctgtcac tgacgttgac cctgggcgag gctgacnaca accactatgg atacccgcac 420
tcctcctcct gagg 434

<210> 1591
<211> 439
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(439)
<223> n = A,T,C or G

<400> 1591
gctttcgcca gaaaatgttg catgtcaaac aatatgtgat ccatactgtg tgtcgtcctt 60
gggggtttat ttgactttgt cacaatgaca gccaacagtg agactgataa gcctgtaaaa 120
ataaaaaaat aagactaatc aaatagacat ggcattttaa tctcaaagtg caaaatcatc 180
taactgaaaa tgacggcatt gagaaattcc agtggttaaa aatgaatcaa aacttcatta 240
cgcaggcagt ggaagtgtgt tgaaagattt accaggggtg tcaagtttta gacactcaga 300
aaggcaccat tctagccatc ttgattggat aacatgtata tacttatgtc cctacgatat 360
tcaaaagata atactgtttt agtacaaaac aatcaaacaa ggcaaagant caaaaccaag 420
ccaacccaaa tatccccag 439

<210> 1592
<211> 74
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(74)
<223> n = A,T,C or G

<400> 1592
tttttttttc taatgttcac agtccctgct ttatttccat ttgttcacac acnctttaaa 60
aaaaaaaaaa aaaa 74

<210> 1593
<211> 288
<212> DNA
<213> Homo sapiens

<400> 1593
ccatccgaag caagattgca gatggcagtg tgaagagaga agacatattc tacacttcaa 60
agctttggtg caattcccat cgaccagagt tggtccgacc agccttggaa aggtcactga 120
aaaatcttca attggattat gttgacctct accttattca ttttccagtg tctgtaaagc 180
caggtgagga agtgatccca aaagatgaaa atggaaaaat actatttgac acagtggatc 240
tctgtgccac gtgggaggcc gtggagaagt gtaaagatgc aggattgg 288

<210> 1594
<211> 455
<212> DNA
<213> Homo sapiens

<400> 1594
ccacacagac tcaccaagcc acagacttgt cttccacaag cacgttctta ccttagccac 60
gaagtgacca agccacacgt actaaaggtt gaactcaaag atatgtacag ggtattaaac 120

aaataccaag gggaacagtt aacttcaata caaggtcaaa atcagcaaca agttctacaa 180
tccagtgctg atatcagata caagcttcaa ggacaatttc ttttcgaagg cttattccag 240
tttcgtgagg ctagcatgag gtgtgtgcat ttgccagggg caaatttcta ttctcaatta 300
acccatgcag caaatgctac gcatctgctg agtccgttta gaagcatttg cggtggacga 360
tggaggggcc cgactcgtcg tactcctgct tgctaatcca catctgctgg aaggtggaca 420
gtgaggccag gatggagcca ccgatccaca ccgag 455

<210> 1595
<211> 367
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(367)
<223> n = A,T,C or G

<400> 1595
ccaggctacc ttcccactgg agacaggcag ggggacaggt gctaagggac ctggcaggca 60
gggctggcag gcccccatggc gcctgttcca gcagatgaca agcccaggtc agggtagagc 120
gggcaggagg ggggacgagg gctcccacaa catgattttg tgtaaaatat ggcagcgaca 180
cacgctcagg gccgggaggt gggggttagg gtggggacgg cggcaacatc gtgtaaaaaa 240
gtgtcccagt tcccatagca aagagagctg tgaccgggtg ttcgagcttc tccagtacaa 300
gggggaaagc cgcccggcgg gggcggcggg cagggacatc atttggtttc ctggtgctgn 360
cagtccg 367

<210> 1596
<211> 193
<212> DNA
<213> Homo sapiens

<400> 1596
ctgttcttca tgcgcctggt ggggaagacg cccattgaga cactgatcag agacatgctg 60
ctgtcgggga gtaccttcaa ctggccctac ggctcgggcc agtgaccatg acggggccac 120
gtgtgctgtg gccaggcctg cagacagacc tcaagggaca gggaatgctg aggccccggg 180
aggcccctcg agg 193

<210> 1597
<211> 145
<212> DNA
<213> Homo sapiens

<400> 1597
ccatgctgga tgttctgctg cttagacctg atctgctgcc aattaccagg ggcaggtcaa 60
ggatgacctt cttggatcca ggaacgctaa catagatcag taaggaatat tcaactcgaa 120
ggatgttgca gcccaggata gaagg 145

<210> 1598
<211> 445
<212> DNA
<213> Homo sapiens

<400> 1598
ctgcctataa aactagactt ctgacgctgg gctccagctt cattctcaca ggtcatcatc 60

ctcatccggg agagcagttg tctgagcaac ctctaagtcg tgctcatact gtgctgccaa 120
agctgggtcc atgacaactt ctggtggggc gagagcaggc atggcaacaa atcccaagtt 180
agggtctcca atgagcttcc tagcaagcca gaggaagggc ttttcaaagt tgtagttact 240
tttggcagaa atgtcgtagt actgaagatt cttctttcgg tggaagacaa tggatttcgc 300
cttcactttc ctgtccttaa tatccacttt gttgccacac aacacaatgg ggatgttttc 360
acacactcgt accagatctc tatgccagtt aggcacattc ttgtaagtaa ctctcgatgt 420
tacatcaaac attatgatgg cacac 445

<210> 1599
<211> 142
<212> DNA
<213> Homo sapiens

<400> 1599
cctgccccag gggaagcac ggacccgaga cgacggcgat gaggaagggc tcctgacaca 60
cagcgaggaa gagctggaac acagccagga cacagacgcg gatgatgggg ccttgcagta 120
agcagcctga caggagcaat gg 142

<210> 1600
<211> 297
<212> DNA
<213> Homo sapiens

<400> 1600
cctgcacttg aacatggctt tggttttaag caacttctct accctgaccc tcctcctggg 60
acagcgtttc gggaggtttc ttggcctcac tgagagggat gtggagctgc tgtaccccgt 120
caaggagaag gtattctaca gcctgatgag ggagagcggc tacatgcaca tccagtgcac 180
caagcctgac accgtaggct ctgctctgaa tgactctcct gtgggtctgg ctgcctatat 240
tctagagaag ttttccacct ggaccaatac ggaattccga tacctggagg atggagg 297

<210> 1601
<211> 289
<212> DNA
<213> Homo sapiens

<400> 1601
ctggagatga tcctcaacaa gccagggctc aagtacaagc ctgtctgcaa ccaggtggaa 60
tgtcatcctt acttcaacca gagaaaactg ctggatttct gcaagtcaaa agacattgtt 120
ctggttgcct atagtgctct gggatcccac cgagaagaac catgggtgga cccgaactcc 180
ccggtgctct tggaggaccc agtcctttgt gcctcggcaa aaaagcacaa gcgaacccca 240
gccctgattg ccctgcgcta ccagctacag cgtggggttg tggtcctgg 289

<210> 1602
<211> 398
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(398)
<223> n = A,T,C or G

<400> 1602
gggagggcag agggagaatg ggaagatcag gaagctctag attacttcag tgataaagag 60

tctggaaaac aaaagtttaa tgattcagaa ggggatgaca cagaggagac agaggattat 120
agacagttca ggaagtcagt cctcgcagat cagggtaaaa gttttgctac tgcatctcac 180
cggaatactg agaaggaagg actcaagtac aagtccaaag tttcactgaa aggcaataga 240
gaaagtgatg gatttagaga agaaaaaaat tatnaactta aagagactgg atatgtagtg 300
gaaaggccta gnactacaaa agataagcnc anagaagaag acaaaaattc tgaaagaata 360
acagtaanga aagaaactca gtcacctgag caggtaaa 398

<210> 1603
<211> 438
<212> DNA
<213> Homo sapiens

<400> 1603
ctggtgatct gctttcttac cctaactctt gacaaatgag tcgtctacta ttttaaagag 60
tctggaggtc tctgactctg ccataacaat aacctgctgt taatttataa cacagatttt 120
tgtttggaag agccttattt gaaatacact ttgattcatt ttcttaaata tttatattct 180
tttcttgctt acttcagggt tggtagctta gttggaagtg ccagcacctg gcacctattc 240
atatagaaca ggctgtactc aagacaactt ctagcattta ctttaagact tatataattt 300
atttctattt tgtgtgtact atagtcttgt gcatatgtag ttgaacacac agtgaaatat 360
atgtctctct ttgtggatgt gcggcctaaa aatttgaatg tctggtgaga gagagccatg 420
tgtataggtc agagaaaa 438

<210> 1604
<211> 297
<212> DNA
<213> Homo sapiens

<400> 1604
cctgcacttg aacatggctt tggttttaag caacttctct accctgaccc tcctcctggg 60
acagcgtttc gggaggtttc ttggcctcac tgagagggat gtggagctgc tgtaccccgt 120
caaggagaag gtattctaca gcctgatgag ggagagcggc tacatgcaca tccagtgcac 180
caagcctgac accgtaggct ctgctctgaa tgactctcct gtgggtctgg ctgcctatat 240
tctagagaag ttttccacct ggaccaatac ggaattccga tacctggagg atggagg 297

<210> 1605
<211> 451
<212> DNA
<213> Homo sapiens

<400> 1605
ggaaaggcta ttgtttctcg acagtttgtg gaaatgaccc gaactcggat tgagggctta 60
ttagcagctt ttccaaagct catgaacact ggaaaacaac atacgtttgt tgaaacagag 120
agtgtaagat atgtctacca gcctatggag aaactgtata tggtactgat cactaccaaa 180
aacagcaaca ttttagaaga tttggagacc ctaaggctct tctcaagagt gatccctgaa 240
tattgccgag ccttagaaga gaatgaaata tctgagcact gttttgattt gatttttgct 300
tttgatgaaa ttgtcgcact gggataccgg gagaatgtta acttggcaca gatcagaacc 360
ttcacagaaa tggattctca tgaggagaag gtgttcagag ccgtcagaga gactcaagaa 420
cgtgaagcta aggctgagat gcgtcgtaaa g 451

<210> 1606
<211> 272
<212> DNA
<213> Homo sapiens

<400> 1606
ccggagccca cggtggtcat ggctgccaga gcgctctgca tgctggggct ggtcctggcc 60
ttgctgtcct ccagctctgc tgaggagtac gtgggcctgt ctgcaaacca gtgtgccgtg 120
ccagccaagg acagggtgga ctgcggctac ccccatgtca cccccaagga gtgcaacaac 180
cggggctgct gctttgactc caggatccct ggagtgcctt ggtgtttcaa gcccctgcag 240
gaagcagaat gcaccttctg aggcacctcc ag 272

<210> 1607
<211> 444
<212> DNA
<213> Homo sapiens

<400> 1607
ccaggctggt ctcaaactcc tcacctcaac tgatccgccc accttggcct cccaaagtgc 60
tgggattata ggtgtgagcc accgtgccca aagttaagta tttttgatca agtgttttgt 120
cttttgtgca aggcatttgt ggctctgtca tagcagagga aaacaaaaca tgcctatcaa 180
atgaatcaag tccgacctct tctcatattg agcaactaga ggtctaggaa catttcccct 240
acctgtcatt ctcatctggc ataccaggtg tacatactcc ttcttattct cctctgttac 300
caagatgttg gccccattgg gtttgaggtc acgaacttca caaactccaa actcttggac 360
ctcagtgctg aaggtgaggt catagcctag tgtggagaca tcattttcca gcagataaac 420
cagaccttgg tagaagtggt aatc 444

<210> 1608
<211> 189
<212> DNA
<213> Homo sapiens

<400> 1608
caaaatccaa aacttctctt gaaaagttca gggaccgtcc aggggagatg gggaggagat 60
atggagtgag tcacctgctc cagaagatgc cagcttctct ctccagggtg cttagttggc 120
tttgcccacc cctcactccc cagggagctc tggggacagc ttcctcgcac ccctgtccca 180
cccacacag 189

<210> 1609
<211> 426
<212> DNA
<213> Homo sapiens

<400> 1609
cttttgttat ccttagagga ctcactggtt tcttttcata agcaaaaagt acctcttctt 60
aaagtgcact ttgcagacgt ttcactcctt ttccaataag cttgagttag gagcttttac 120
cttgtagcag agcagtatta acacctagtt ggttcacctg gaaaacagag aggctgaccg 180
tggggctcac catgcggatg cgggtcacac ggaatgctgg agagatgtta tgtaatatgc 240
tgaggtggcg acctcagtgg agaaatgtaa agactgaatt gaattttaag ctaatgtgaa 300
atcagagaat gttgtaataa gtaaatgcct taagagtatt taaaatatgc ttccacattt 360
caaaatataa aatgtaacat gacaagagat tttgcgtttg acattgtgtc tgggaaggaa 420
gggcca 426

<210> 1610
<211> 447
<212> DNA
<213> Homo sapiens

<400> 1610

cagggctata gtgcgctatg ttgatctggt gttcatgcta agttccgcat caatatggtg 60
acttcttggg agtgggggac caccaggttg cctaaggagg ggtgaacctg cctacgttgg 120
aaatagagct ggtcaaaact cctgtgctca tcagtagtag aattgcacct gtgaatagcc 180
accgccctcc agcatgggca acatagcaag accctgcctc ttaagataaa aattggaaaa 240
cactggtagg aaaaaaaggc tgtttggtct aaataagtct ggattgggta taaatgacac 300
aaaactatca tgaatttgaa agcatttcta atttcttgaa agtctgaaaa agtttaaaca 360
gaattttagc tgaaaagtcc tgaaagacat ttgaaaaaaa acagcaagaa cacttaaaac 420
tattcaaggt ttgggctggg cacagtg 447

<210> 1611
<211> 238
<212> DNA
<213> Homo sapiens

<400> 1611
ccaccggggt tgacctctct cgctagcagg gcccacccag ctcactcccc gcgtcttcca 60
tcccctctag gattcccatt gtcccctact ccagcactag gcaggcaccc ccagcccact 120
gcgactccca ccacgaagga ccccagccct ctctcagcca acacggcccc gcccaccgtc 180
tcagacatcg tgcttcttct ggtgggccag gagtctctcc tcgtcgtcga aggtctgg 238

<210> 1612
<211> 293
<212> DNA
<213> Homo sapiens

<400> 1612
ctgctgcttg tatcctcggg agagggtttc ccactctgag cgggtgggaa ggcaatgcca 60
aacatccggg aaaaataaaa ccactgtctc cacatgagct ggaactgtac gccccttgtg 120
ggtctcctca gggcgatggt agcgaatctc tgcaaaacgg taccattgtg tgcacacact 180
tagatcaatg cctgtcagag ccttacaaca acgaatagca gtcttaatca acacagaggg 240
atctttttct gggtctggtc catccaacga aggagaccag tggcccccaa tgg 293

<210> 1613
<211> 224
<212> DNA
<213> Homo sapiens

<400> 1613
ctggattgac cccaaccaag gctgcaacct ggatgccatc aaagtcttct gcaacatgga 60
gactggtgag acctgcgtgt accccactca gcccagtgtg gcccagaaga actggtacat 120
cagcaagaac cccaaggaca agaggcatgt ctggttcggc gagagcatga ccgatggatt 180
ccagttcgag tatggcggcc agggctccga ctctgccgat gtgg 224

<210> 1614
<211> 439
<212> DNA
<213> Homo sapiens

<400> 1614
ctccaccctg gcgatggctc cctggtccta ctttctctct caaactggct ttttctcatt 60
cctttgactc cgccagactt cctcgccccc atgacctggt gttgtgtctg atcaccccaa 120
cattcctggc tgcccaatgt ggggcaatga agaccccagt gaaggaatgc tagagtgtgt 180
gaaagtggag gacgcatcgt caaaggacac ctgaggacgt ctcaaagaag ctcggcggga 240
gagctgagcg ctcggaagaa ccaagaatca tctcttttga aaaatcgatt catcaaatga 300

atcttcggcc aacaactgtt caagaaggat tcaaatatca caggttccaa gaagtaaagc 360
tttggaggtc acaaaattag caatagaagc tgggttccgc catatagatt ctgctcattt 420
atacaaataa tgaggagca 439

<210> 1615
<211> 237
<212> DNA
<213> Homo sapiens

<400> 1615
aggcactcct ggaagtggtt cagtcaggtg gcaaaaacat tgaacttgct gtcatgaggc 60
gagatcaatc cctcaagatt ttaaatcctg aagaaattga gaagtatgtt gctgaaattg 120
aaaaagaaaa agaagaaaac gaaaagaaga aacaaaagaa agcatcatga tgaataaaat 180
gtctttgctt gtaattttta aattcatatc aatcatggat gagtctcgat gtgtagg 237

<210> 1616
<211> 266
<212> DNA
<213> Homo sapiens

<400> 1616
ctgggctcta gtttcattcc atctgtcatt ctcaggtaac agggacacat gtccaagtgt 60
tggcccccgt ggcatgattg tagctttgtt gataggcatt gcatcttttg tgtaatatgc 120
aataatggca tgaccagatt catgatatgc tgtgatggtt ttgtttttgt tatcaatttc 180
cacacttctt ctttcaggcc ccattagaat tttgtctttg gaaaactcca gctccttcat 240
ggtaaccatt tcttttccat caacag 266

<210> 1617
<211> 185
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(185)
<223> n = A,T,C or G

<400> 1617
ccatggctag gtttatagat agttgggtgg ttggtgtaaa tgagtgaggc aggagtccga 60
gnaggttagt tgtggcaata aaaatgatta aggatactag tataagagat caggttcgtc 120
ctttagtgtt gtgtatggtt atcatttgtt ttgaggttag tttgattagt cattgttggg 180
tggtg 185

<210> 1618
<211> 354
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(354)
<223> n = A,T,C or G

<400> 1618

ctgttaacag ataagtttaa cttgcatctg cagtattgca tgttagggat aagtgcttat 60
ttttaagagc tgtggagttc ttaaatatca accatggcac tttctcctga ccccttccct 120
aggggatttc aggattgaga aatttttcca tcgagccttt ttaaaattgt aggacttgtt 180
cctgtgggct tcagtgatgg ngatagtaca catntcactc agagngcatn tntgcatctt 240
ntaanatana tttcttaaaa gcctctaaag tgatcagntg ccttgatgcc aactaaggaa 300
atttgtttag cattgaatct ctgaaggctc tatgaaagga atagcatgat gtgc 354

<210> 1619
<211> 170
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(170)
<223> n = A,T,C or G

<400> 1619
ctgtgctgtg gagagaagct gatgttttgg tgtattgtca gccatcgtcc tgggactcgg 60
agactatggc ctcgcctccc caccctcctc ttggaattac aagccctggg gtttgaagct 120
gactttatag ctgcaagtgt atctnncttt tatctggtgc ctcctcaaac 170

<210> 1620
<211> 386
<212> DNA
<213> Homo sapiens

<400> 1620
cctgttgatt gcatactgta gaagatttga tgttcagact ggttcttctt acatatacta 60
tgtttcgtct acagttggta aatttttgtt tttctttgta ttaaatgttg aattgtattg 120
tctggaggaa aagacagagg tctaaaaata aagaaggagt acagtttggg catggtggtt 180
cacccctgga gtcctagcac tttgggggcc aaggcaggca gattgcttga gcccaggagt 240
tctagatgag cctgggcaac atagtgagac cccatctcta aaaaaacagt tttagggcca 300
ggcacagtgg ctcacacctg taagcccagc actttgggag gccgaggcag gcagatcata 360
agggcaagag attgagacca tcctgg 386

<210> 1621
<211> 346
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(346)
<223> n = A,T,C or G

<400> 1621
ccaattctgc ccgttccccg tgggccaaca acactggggt tgtatgcgtc tggaaccctg 60
tgatagtctt cggcttgcca gcctggccca ccacatccac tgcctggccc acacggacag 120
acactggcaa tggccgcagc tcctcatcaa acgtaaccag cattcggggc tgcatggcag 180
ccaccagccc atacaataca tagtgtgatt tgcctagaat aatgtttcga acatccagga 240
aagagacaag cacagtgagc agtccancca cggccacctg gctcataagc tgccggtcgc 300
tgtggtaggg gcagagggta agggtgccct tccctaaatg tgtcag 346

<210> 1622
<211> 366
<212> DNA
<213> Homo sapiens

<400> 1622
ggaagtttgt gctctctgcg tggctaagtt tttcacctac taggacgggg gtggggtggg 60
gagaacaggt gtccttctaa aatacagcac aagctacagc ctgcgtccag ccataaccca 120
ggagtaacat cagaaacagg tgagaatgac cactttaact caccgggccc gtcgcactga 180
aataagcaag aactctgaaa agaagatgga aagtgaggaa gacagtaatt gggagaaaag 240
tccagacaat gaagattctg gagactctaa ggatatccgc cttactctta tggaagaagt 300
attgcttctg ggactaaaag ataaagaggg gtacacatct ttctggaatg actgcatatc 360
atcagg 366

<210> 1623
<211> 165
<212> DNA
<213> Homo sapiens

<400> 1623
ctgttgattg gctgtgacac tgctttgtgt catcttctta ccatgatcaa aggcgaagga 60
agggatctct tttgggacat tgtgattgtt ttagcagaga gagaaagaga tgaaatacac 120
ttcggttttc tcttaaaaga tgcatgtatc atacagtgct ttaag 165

<210> 1624
<211> 227
<212> DNA
<213> Homo sapiens

<400> 1624
ccaatgcccg gagcaggccc tctttccatc ccctgtcgga tgagctggtc aactatgtca 60
acaaacggaa taccacgtgg caagccgggc acaacttcta caacgtggac atgagctact 120
tgaagaggct atgtggtacc ttcctgggtg ggcccaagcc accccagaga gttatgttta 180
ccgaggacct gaagctgcct gcaagcttcg atgcacggga acaatgg 227

<210> 1625
<211> 373
<212> DNA
<213> Homo sapiens

<400> 1625
ctgtagcttt tgtgggactt ccactgctca ggcgtcaggc tcaggtagct gctggccgcg 60
tacttgttgt tgctttgttt ggagggtgtg gtggtctcca ctcccgcctt gacggggctg 120
ctatctgcct tccaggccac tgtcacggct cccgggtaga agtcacttat gagacacacc 180
agtgtggcct tgttggcttg aagctcctca gaggagggtg ggaacagagt gaccgagggg 240
gcagccttgg gctgacctag gacggtcagt ttggtccctc cgccgaacac ccgaagataa 300
ttagtgctgt ctgttgagta acaatagtag tcaccttcat cttccacctg ggccccagtg 360
atggtcaagg tgg 373

<210> 1626
<211> 367
<212> DNA
<213> Homo sapiens

<400> 1626
ccagacgtgg tggctcacac ctgcaatccc agcaccttag gaggccgagg caggaggatc 60
cttgaggtca ggagttcgag accagcctcg ccaacatggt gaaaccccat ttctactaaa 120
aatacaaaaa ttagccaagt gtggtggcat atgcctgtaa tcccaactac tcagaaggcc 180
gaggcaggag aattacttga acgcaggaga atcactgcag ccctggaggc agaggttgca 240
gtgagccgag attgcaccac tgtactccag cctgggtgac agagcaagac tccatctcag 300
taaataaata aataaataaa aagcgctgca gtagctgtgg cctcaccctg aagtcagcgg 360
gcccagg 367

<210> 1627
<211> 424
<212> DNA
<213> Homo sapiens

<400> 1627
ctggataagg acatcaatac cttctctatg cgtgtcaggg tgtggtacgg gtatcacttt 60
ccggagctgg tgaagatcat caacgacaat gccacatact gccgtcttgc ccagtttatt 120
ggaaaccgaa gggaactgaa tgaggacaag ctggagaagc tggaggagct gacaatggat 180
ggggccaagg ctaaggctat tctggatgcc tcacggtcct ccatgggcat ggacatatct 240
gccattgact tgataaacat cgagagcttc tccagtcgtg tggtgtcttt atctgaatac 300
cgccagagcc tacacactta cctgcgctcc aagatgagcc aagtagcccc cagcctgtca 360
gccctaattg gggaagcggt aggtgcacgt ctcatcgcac atgctggcag cctcaccaac 420
ctgg 424

<210> 1628
<211> 314
<212> DNA
<213> Homo sapiens

<400> 1628
tcgactgtta tagcttagaa agcaacacta ctactatgag actataaaac attaaactat 60
tttaagaaaa ccacgctgtg gaaaaatgga gccatttttg tcaaaaagtg gctcaaagca 120
caaaactgct cagatgttca agagtcctag gagtctgggc tgcacagtat taaggggtga 180
gaggagaccg acagcctgtt tgaatcaggc ttgtgagccc agctcatctg acaacttcaa 240
agagcttctc tgcctataca ttccaccgtt tagcataaga caccacttta cgctatttac 300
aagtctcctt ttgg 314

<210> 1629
<211> 393
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(393)
<223> n = A,T,C or G

<400> 1629
ctggaccagc accccattga cgggtacctc tcccacaccg agctggctcc actgcgtgct 60
cccctcatcc ccatggagca ttgcaccacc cgctttttcg agacctgtga cctggacaat 120
gacaagtaca tcgccctgga tgagtgggcc ggctgcttcg gcatcaagca gaaggatatc 180
gacaaggatc ttgtgatcta aatccactcc ttccacagta ccggattctc tctttaaccc 240
tcccсttcgt gttttccccc aatgtttaaa atgtttggat ggtntgttgt tctgcctgga 300
gacaaaggtg ctaacataga tttaagttga ataacattaa cggtgctaaa aaatgaaaaa 360

ttctaaccca agacatgaca ttcttagctg taa 393

<210> 1630
<211> 317
<212> DNA
<213> Homo sapiens

<400> 1630
ctgcaagaat atcagaaatc aatacaaaca agtattgaca ggtgttacag acatgcaaaa 60
tatccttcaa tgcaacgaat ttttaagaaa tcagctagcc tatattaatc agatgtttta 120
ggtcaaacca agtttccatc tcgggctcag tgaaatagta ttaactcatt gagtctcctt 180
tccccccagga atgttgggaa tggcagaaca gaaagagcta tcactcctta aattctttta 240
tgcgagtgtt actccaacac ttattttact tggtttactt ggaatgtatg agaggaaact 300
gatgtttttt acaatgg 317

<210> 1631
<211> 262
<212> DNA
<213> Homo sapiens

<400> 1631
ccttaggcaa gtcaccttac ttatctaaga ctgtttcccc acctggaaga tgccctacaa 60
gcctcctgtg gctgtgttta gaaagcatgc ccggcctttc ttgacagcca gccaccccag 120
atgatggcag ggcaaggaag actgttagga gtcagagtgc tcccctcagg tggaaggaaa 180
ctgggccaac tctactttgt aagccatagg gtgccaggta gcccggccac cctgagcctg 240
tgcctccact gcccccgcgt gg 262

<210> 1632
<211> 138
<212> DNA
<213> Homo sapiens

<400> 1632
ctggaattaa ttcttcgaca actccagacc gaccttcgga aggaaaaaca agacaaggcc 60
gttctccaag cagaagtgca gcacctgaga caggacaaca tgagactgca ggaggagtcc 120
cagaccgcga cagctcag 138

<210> 1633
<211> 192
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(192)
<223> n = A,T,C or G

<400> 1633
ccttgaaggg acctcanagc aaaggaagag acctgggtgt ggtgaggcat cccanggcat 60
ggaagggacc ggttgtgctn ngggaatcca ctgnnccctc cttggnnaaa aaagcacaac 120
acatcataca tatttaccag accagaagcg ctggccccaa gtctccccaa cctggtcggg 180
ggaacctcct gg 192

<210> 1634

<211> 447
<212> DNA
<213> Homo sapiens

<400> 1634
ctgcttttaa aggtcttaaa tcactcgaat accttgactt gagcttcaat cagatagcca 60
gactgccttc tggtctccct gtctctcttc taactctcta cttagacaac aataagatca 120
gcaacatccc tgatgagtat ttcaagcgtt ttaatgcatt gcagtatctg cgtttatctc 180
acaacgaact ggctgatagt ggaatacctg gaaattcttt caatgtgtca tccctggttg 240
agctggatct gtcctataac aagcttaaaa acataccaac tgtcaatgaa aaccttgaaa 300
actattacct ggaggtcaat caacttgaga agtttgacat aaagagcttc tgcaagatcc 360
tggggccatt atcctactcc aagatcaagc atttgcgttt ggatggcaat cgcatctcag 420
aaaccagtct tccaccggat atgtatg 447

<210> 1635
<211> 364
<212> DNA
<213> Homo sapiens

<400> 1635
gttttatttg agacataaaa acacatgtgt ttctattaca tagtgtgggg tttagggtcc 60
tggtttctaa gacaagactt tatttcaccc tgtatcacag cttcctggga aatgaattag 120
ggagcaagag acggcctggc aagaaaatca ttattgttgc tgggaagttg caaagaaagg 180
ggagagttta ttcaaattag tgtaacagag cccccaggat gaagagagtg gtgcagggaa 240
aaggtctaaa ttcctggtgt tggtggggac actggcacat cccacagcaa ggactcagcc 300
ctcaacggcg gcggctgggt cttgggaggg gagtggtggg agggtaaggg ctcctcagct 360
ccct 364

<210> 1636
<211> 399
<212> DNA
<213> Homo sapiens

<400> 1636
ctggctggct agactgtttg tgcgccaaga ggatggtcag cgctgctttc cagcctggct 60
ctgctggggc gctggcatct ggttcagttc caccattctc cctgctttct ttgccaagtg 120
tgatattcac ccaagggcac cagtctctat gctgagaggt gggatcaaag aagcttcggg 180
aagatgtgtc cgaactgctg gaggagcaga ggcgagctcg cttggctttc cgcagagggc 240
tagatggtac ctccaggcca ggggtgtctc ctgttcccat gcttcgggtc actgggcgag 300
ttctggtggt ggggctagca gcctctggct caggacggtc aacaggactg gaagagtccc 360
agctccgagt tcgagagaca atgggaccag ggctctttt 399

<210> 1637
<211> 246
<212> DNA
<213> Homo sapiens

<400> 1637
ctgagctttc agcagataaa tcacagcaga aatagaatca ccctaggact ttcaatcaaa 60
agctggaagt ccaccttaca gaaagacaaa aagaaacccc tttttatatc ttaacaaagc 120
aatagctctc aagcagcaga gcatctcgag gaagaaagct tgcccggtcg ccatcccatc 180
atgccagagc gtgcagtgtc caccccttgac tacgctgggg aattgctgat tttttgaaaa 240
agcttg 246

<210> 1638
<211> 453
<212> DNA
<213> Homo sapiens

<400> 1638
ccaagagttc tccactgtga agactgaaag gacctggtga catttcggca tcagtcctgt 60
taccacttgg aggtaacaga agcaggctcg tgtcctcctt taattctacc acactacatg 120
actcgcaatt ggttctgaaa ttagaacgtt caccatcgta cttaaaatct taggggcatg 180
aagagtcagc tagaacaagg aaaaagaaag tcgcaggtag taggtaagta ggtgggcaca 240
tgaaaagcca agctgctctg tccaacacca gtgtacatgt gctttaacta aatgaactcc 300
agaggccaac agcagcagac ctgctcaatt caccttccaa atcagaacaa gaccaaaaag 360
ctcaggcttg agttgtcaac tatgcatagg ttccgccagt gatgaggagc tcgtaagcag 420
gatctctact ccttctgcac aacacgatgc aag 453

<210> 1639
<211> 197
<212> DNA
<213> Homo sapiens

<400> 1639
tttgctgttc gtgatatgag acagacagtt gcggtgggtg tcatcaaagc agtggacaag 60
aaggctgctg gagctggcaa ggtcaccaag tctgcccaga aagctcagaa ggctaaatga 120
atattatccc taatacctgc caccccactc ttaatcagtg gtggaagaac ggtctcagaa 180
ctgtttgttt caattgg 197

<210> 1640
<211> 278
<212> DNA
<213> Homo sapiens

<400> 1640
ccagagcggt gagtcccacc acctcgaact ctgggaattc gagccacagc tctgccagta 60
ccccaagact cagcactagt ctgatgacct gctaattcac tgacagcata gggctgtctg 120
ttgtttttgc gcaagttggt gtgaacaaag ttcacaatat ctggtcgaat aggagccttg 180
aatacagcag gcaaagtgac atttttgcca gatgactccc ccttttcgga gtacaccgat 240
atcagtgggc gagcgcacgc catggcggac ctcggccg 278

<210> 1641
<211> 227
<212> DNA
<213> Homo sapiens

<400> 1641
ccattgttcc cgtgcatcga agcttgcagg cagcttcagg tcctcggtaa acataactct 60
ctggggtggc ttgggcccac ccaggaaggt accacatagc ctcttcaagt agctcatgtc 120
cacgttgtag aagttgtgcc cggcttgcca cgtggtattc cgtttgttga catagttgac 180
cagctcatcc gacaggggat ggaaagaggg cctgctccgg gcattgg 227

<210> 1642
<211> 299
<212> DNA
<213> Homo sapiens

<400> 1642
ctgcacatca aggacatctt caggaagttc aggattgccg tagctaaact gaaaaccacc 60
atccatggac tctccaaacc aaacgtgttt cttctcagca ctagaatctg tccaccagtg 120
tttccgtgga acattcaaag gattggcact tatgcatgtt tccccagttt ccatattaca 180
gaataccttg atagcatcca atttgcatcc ttggttaggg tcaacccagt attctccact 240
cttgagttca ggatggcaga atttcaggtc tctgcagttt ctagcggggt ttttacgag 299

<210> 1643
<211> 301
<212> DNA
<213> Homo sapiens

<400> 1643
ccaagggcta caatgagcag cgcatcagac agaacgtgca ggtttttgag ttccagttga 60
ctgcagagga catgaaagcc atagatggcc tagacagaaa tctccactat tttaacagtg 120
atagttttgc tagccaccct aattatccat attcagatga atattaacat ggagagcttt 180
gcctgatgtc taccagaagc cctgtgtgtg gatggtgacg cagaggacgt ctctatgccg 240
gtgactggac atatcacctc tacttaaatc cgtcctgttt agcgacttca gtcaactaca 300
g 301

<210> 1644
<211> 365
<212> DNA
<213> Homo sapiens

<400> 1644
ctggtgagcg aaggatggga gcagagaaca gagctaaaac ccctggtttt cctttcccca 60
gatgtaaagc ctgctagctg gaactcacag aagattggaa caaaaagata ggagatggac 120
acctggggga ctgctccagc acgaagggaa gcgatgagca tcacacagca gggccattgc 180
aggggacagg tgctgtaatt cctgcccaga gaacttgaaa gcttacagtg tgctcacagg 240
aaggaatcgg ctcagctagt ccagaaattg ctgcatttcc catattactt agttctttat 300
tcatcctgtg gtaaagagtc acccttgttt tccgtatcta taaaactgaa agacttaaaa 360
tttac 365

<210> 1645
<211> 249
<212> DNA
<213> Homo sapiens

<400> 1645
ctggtgctgg aactgcagaa agttaagcag gagaacatcc agctagcggc agacgcccgg 60
tctgctcgtg cctatcgaga cgagctggat tccctgcggg agaaggcgaa ccgcgtggag 120
aggctggagc tggagctgac ccgctgcaag gagaagctgc acgacgtgga cttctacaag 180
gcccgcatgg aggagctgag agaagataat atcattttaa ttgaaaccaa ggccatgctg 240
gaggaacag 249

<210> 1646
<211> 433
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(433)

<223> n = A,T,C or G

<400> 1646
ctgtggccgg attgatgggg cccccacttc ctagggctga aggcaagttg aaggaagcag 60
caggagtacc ggaatgaaaa ccttgtttct caaaggactg ctgggttttg gagtacacag 120
aacccgagat atctggcacg cccgtgttac tggaggtgac tgaaacacca gtgttgtatc 180
catgagaccc atatccactc ggctgttgga aaggggtggc cgatgcattc acactgacat 240
tcacaccatg ctgcttggaa gaggtaggag ccacagggaa cacagcaggc ccatactgga 300
aggtgctggg gaggcccggg accccctgtat agtatggcag gctggtgtaa actgtagcca 360
ggaggcagcg ccgggttcag gaatgtctgc tgcgtggnat ggtgagtctg cgtctggttt 420
ctgttggggt tgg 433

<210> 1647
<211> 451
<212> DNA
<213> Homo sapiens

<400> 1647
ccagcttgca agcacgctgg caaatctctg tcaggtcagc tccagagaag ccattagtca 60
ttttagccag gaactccaag tccacatcct tggcaactgg ggacttgcgc aggttagcct 120
tgaggatggc aacacgggac ttctcatcag gaagtgggat gtagatgagc tgatcaagac 180
ggccaggtct gaggatggca ggatcaatga tgtcaggccg gttggtagcg ccaatgatga 240
acacattttt ttttgtggac atgccatcca tttctgtcag gatctggttg atgactcggt 300
cagcagcccc accaccatct ccaatgttac ctccacgagc cttggcaatc gaatccagct 360
catcaaagaa tagcacacag gggcagcttt ggcgggcctt gtcaaagatt tctctgacat 420
tggcctcaga ctccccaaac cacatggtga g 451

<210> 1648
<211> 176
<212> DNA
<213> Homo sapiens

<400> 1648
cctaaacgag gatttcagct tccattatgc ccaactccag tccaacatca ttgaggcgat 60
taatgagctg ctagtggagc tggaagggac aatggagaac attgcagccc aggctctgga 120
gcacattcac tccaatgagg tgatcatgac cattggcttc tcccgaacag tagagg 176

<210> 1649
<211> 435
<212> DNA
<213> Homo sapiens

<400> 1649
tgtggctgtg ccgttggtcc tgtgcggtca cttagccaag atgcctgagg aaacccagac 60
ccaagaccaa ccgatggagg aggaggaggt tgagacgttc gcctttcagg cagaaattgc 120
ccagttgatg tcattgatca tcaatacttt ctactcgaac aaagagatct ttctgagaga 180
gctcatttca aattcatcag atgcattgga caaaatccgg tatgaaagct tgacagaccc 240
cagtaaatta gactctggga aagagctgca tattaacctt ataccgaaca aacaagatcg 300
aactctcact attgtggata ctggaattgg aatgaccaag gctgacttga tcaataacct 360
tggtactatc gccaagtctg ggaccaaagc gttcatggaa gctttgcagg ctggtgcaga 420
tatctctatg attgg 435

<210> 1650
<211> 246

<212> DNA
<213> Homo sapiens

<400> 1650
ccatgtctgt attgtaactg gtaaaaggct tcaagtcaga ttgatgatca agaaaagtca 60
aaaccccagc ccaagattgg gaaagcaggt ggtggttcca agcttttaaa aaattattga 120
agctctccat cctgttctgt gagtgtgtct tctctttctc cttcacgtca tagccgtgac 180
ccaccgttca tctctgctct tgcgtaaaga tgaccgatgg agtccaaagc caagtggctt 240
caccag 246

<210> 1651
<211> 400
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(400)
<223> n = A,T,C or G

<400> 1651
cggcaagttc tcccaggaga aagccatgtt cagttcgagc gccaagaccg tgaagcccaa 60
tggcgagaag ccggacgagt tcgagtccgg catctcccag gctcttctgg agctggagat 120
gaactcggac ctcaaggctc agctcaggga gctgaatatt acggcagcta nngaaattga 180
agttggtggt ggtcggaaag ctatcataat ctttgttccc gttcctcaac tgaaatcttt 240
ccagaaaatc caagtccggc tagtacgcga attggagaaa aagttcagtg ggaagcatgt 300
cgnctttatc ggctcagagg aggaattctg cctaagccaa ctcnaaaaag ccgnacnaaa 360
aattanngca aaaagcgtnc caggagccgt nctctgacag 400

<210> 1652
<211> 338
<212> DNA
<213> Homo sapiens

<400> 1652
ctgggggtgc ccatcttctg tgctctgtgg tacatatctg tgtcgccaaa gtagcgtgcc 60
cggtacagca agccttcctt ctgctgcttc tccttccagc agttgttccg gaggttggcg 120
atataatcat cttccacatt ccgctcgact gttttgaggc tggagcctgt gtactcttcg 180
gagaaagtgt ctcccacata gtagacgaca cccaggtggt cagtgactcg cctgtggatg 240
tggcccacag acggtcttgg actcagactg tagggtggac tggagaccat gagctggctg 300
agagctgaca cgagaatcag gatgaggata ggcatcag 338

<210> 1653
<211> 167
<212> DNA
<213> Homo sapiens

<400> 1653
gcggtggagc cgccaccaaa atgcagattt tcgtggaaac ccttacgggg aagaccatca 60
ccctcgaggt tgaaccctcg gatacgatag aaaatgtaaa ggccaagatc caggataagg 120
aaggaattcc tcctgatcgg cagagactga tctttgctgg caagcag 167

<210> 1654
<211> 1034
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1034)
<223> n = A,T,C or G

<400> 1654
atgcatgctc gagcggccgc cagtgtgatg gatatctgca gaattcgccc ttagcgtggt 60
cgcggccgag gtccaagagg gagataanac aaacttctca aacaaaaaga aaagaaaaac 120
gaatgattca tctgctttaa tcagtgtgat taatgcagca cccattgccc cgggaaccgt 180
ttctgctgta ctatctggat actaaaatgt tacggaagta gctctttgtt ctccctcact 240
ctgcccttag ttaatagaaa ttcagactcg ccaagtaagg ctttgtgcat agtgtcttca 300
tgtcgcgtat agttgagcgc gttcttagca gttggcttca tggacagctc attagtgttt 360
tgacttttct tacccagcgt taattgaatt cttgctttta gacaacttcc tttttgtagt 420
ggtgaacctt gccctttagt acagttcaag tgaatctgga taattgttca tctttgcttt 480
agcttagata ccatgtagtg gtctgtggct acaggaagct ggttctgtct gcttccacag 540
tctgcttaaa aaactgtctg acttcgtgaa tatagagacc aagtttacca cttctgatga 600
agagaccaat taagattcat tcctcattct gtttctttcc agtgggagaa gagtccccat 660
gaaataagat gaaactgatt ccatgcacta gtacatgtag gcttctccct tgcgcaaagc 720
ttaacaattt gtaggaaact ttgggtcttt ttgtcccaag aaaaaggaat gtcttgacag 780
gcttaaagct tttcgtcccc ttgcacctta aaactcgaaa gttaggnaaa atccctttaa 840
agggcttttt ttaatagcca gaacttccca aaaggaatgg cnttttaggg aatttcntag 900
ccatngcttt ttaaatttaa agaaattttt aanaaccttg ccccnggggn ggggncccgc 960
tccaaaaagg ggnggnaaaa ttccccagcc naccctttng ggggggccn cgttttcctt 1020
tnnnggggggg aanc 1034

<210> 1655
<211> 487
<212> DNA
<213> Homo sapiens

<400> 1655
atgcatgctc gagcggccgc cagtgtgatg gatatctgca gaattcgccc tttcgagcgg 60
ccgcccgggc aggtcctact cttctccgtc cattgtacta tctgcccgtg gtggggatgg 120
cagtaggatc atatttgatg acttccgaga agcatattat tggctccgtc ataatactcc 180
agaggatgcg aaggtcatgt cctggtggga ttatggctat cagattacag ctatggcaaa 240
ccgaacaatt ttagtggaca ataacacatg gaataatacc catatttctc gagtagggca 300
ggcaatggcg tccacagagg aaaaagccta tgagatcatg agggagctcg atgtcagcta 360
tgtgctggtc atttttggag gacctcggcc gcgaccacgc taagggcgaa ttccagcaca 420
ctggcggccg ttactagtgg atccgagctc ggtaccaagc ttggcgtaat catggtcata 480
gctgttt 487

<210> 1656
<211> 514
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(514)

<223> n = A,T,C or G

<400> 1656
atgcatgctc gagcggcccg ccagtgtgat ggatatctgc agaattcgcc cttancgtgg 60
tcgcggccga ggtcctaccc ataatccaga gaggcttgcc cagaggagga ctacgtgggg 120
gacgtgccac cagaacccta cttgggggcg ggatgtcact ccgaggtcaa aacctgctcc 180
gaggtggacg agccgtagct ccccgaatgg gcttaagaag aggtggtgtt cgaggtcgtg 240
gaggtcctgg gagaggggc ctagggcgtg gagctatggg tcgtggcgga atcggtggta 300
gaggtcgggg tatgataggt cggggaagag ggggctttgg aggccgaggc cgaggccgtg 360
gacgagggag aggtgccctt gctcgccctg tattgaccaa ggagcagacc tgcccgggcg 420
gccgctcgaa gggcgaattc cagcacactg gcggccgtta ctagtggatc cgagctcggt 480
accaagcttg gcgtaatcat ggtcatagct gttt 514

<210> 1657
<211> 605
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(605)
<223> n = A,T,C or G

<400> 1657
atgcatgctc gagcggccgc cagtgtgatg gatatctgca gaattcgccc tttcgagcgg 60
ccgcccgggc aggtccanac gctgacattg nttctgagtc cttaagcagg aaggatttga 120
aatcctggag cttggcagtc ttgctcttca cctctaagcc aatgttgacc ccttcatcta 180
taaagtccac aactctccgg aagtcatcct cacggaactg tcgagaagtt aaggctgggg 240
ccccaagccg caggccgccc ggtgtgatgg cacttcggtc tccaggacag gtgttcttgt 300
tggcagtgat ggatacaagc tctagcaccc gctcagcccg agctccatcc aggcccttgg 360
gccgcaggtc caccagcacc aggtggttgt cagtaccacc tgataccagt gagtagcctc 420
gccctagcag ggcatctgcc atggcccgag cattcttcag aacctgcagg gagtactccc 480
ggaacatggg ggtgcaggac ctcggccgcg accacgctaa gggcgaattc cagcacactg 540
gcggccgtta ctagtggatc cgagctcggt accaagcttg gcgtaatcat ggtcatagct 600
gtttc 605

<210> 1658
<211> 784
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(784)
<223> n = A,T,C or G

<400> 1658
agnnttccgn cggccctcna gntgcatgct cgagcggccg cgcagtgaga tgnatatctg 60
cagaattcgc ccttancgtg ggcgnangca tgacgctcgg gatcagaact aaaacaagtg 120
agatcacccc tctaattatt tctgaactng gttaataaaa gcttataaga tttttatgaa 180
gcanccactg tatgatattt taagcaaata tgttatttaa aatattgatc cttcccttgg 240
accaccttca tgttagttgg gtattataaa taagagatac aaccatgaat atattatgtt 300
tatacaaaat caatctgaac acaattcata aagatttctc ttttatacct tcctcactgg 360
ccccctccac ctgcccatag tcaccaaatt ctgttttaaa tcaatgacct aagatcaaca 420

atgaagtatt ttataaatgt atttatgctg ctagactgtg ggtcaaatgt ttccattttc 480
aaattattta gaattcttat gagtttaaaa tttgtaaatt tctaaatcca atcatgtaaa 540
atgaaactgt tgctccattg gagtagtctc ccacctaaat atcaagatgg ctatatgcta 600
aaaagagaaa atatggtcaa gtctaaaatg gctaattgtc ctatgatgct attatcatag 660
actaaccgac atttatcttc aaaacaccaa attgtcttta gaaaaaatta atngtgatta 720
ccaggtagaa ggacctgccc gggcggnccg ctcgaaaggg ccgaaattcc agccccacct 780
gggc 784

<210> 1659
<211> 789
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(789)
<223> n = A,T,C or G

<400> 1659
tngngccctc tagatgcang ctcgagcggc cgccagtgtg atggatatct gcagaattcg 60
cccttagcgt ggtcgcggcc gaggtccatt aaagataagt ttggctaact attttactga 120
agagactaat ggtcttccct ctgttgtact gctatgtttc ttgatctgtt tttccccaat 180
gtaacagtct acattgaagt cctttagctc tctccatata ctaattgaca tttgttaagg 240
attcaatatt ttgtgaattc tttttaccct taaaatgcat atctttcaga gagataagaa 300
tgaattttgc aataatttat atgcagagtg tgcttatggg tttctgggag ttcaagttag 360
taccccagag tgcttaaaag tacgatgcta aattctaagg ctaatgtaat gactgtagat 420
tatctatgtc cacattgttc aacagaaata taatgtgaac cacaacataa tttttaattt 480
tctagtagcc atattaaaaa agaaacaagc aaaattaatt ttaataacag tttatgtaac 540
ccagtatatt aaaaatatca tttcaacatg taatcaatat aaaagattat taatgaaaca 600
ccttatcctc tttttcttcc atgctaagtc ttagatttga gtgtattttg cactcacagc 660
acatctcaat tctgactgga cctgcccggg cggccgctcg aaagggcgaa ttccagcaca 720
ctgggcggcc gttactagtg gatccgagct ccggtaccaa gcttggcgta atcatggtca 780
tagctgttt 789

<210> 1660
<211> 559
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(559)
<223> n = A,T,C or G

<400> 1660
ccncgccctc tagatgcatg ctcgagcggc cgccagtgtg atggatatct gcngaattcg 60
ccctttccag cggccgcccg ggcaggtcca tcagacttct tgggtgcctg gctatattca 120
atgtgaagta aaaaatatcc caagtcttac accaaaatag aggctctgac ttagaagtat 180
gcttttagct ttctttttaa ataagacatt ctggaagaaa aaaaaagaaa aaggaaagaa 240
aatcaagttt gaaacacagt taacacttat tttggcaaga aagcaaccaa aatctaaaaa 300
gcataaacta tgngtccaaa tgnaaaaggn attacagaac aaactgcaag aggggaaaat 360
taaagccnca ctgaacgaaa aaatacagta tgtctaacat tttggaattg naatttaaac 420
cctaagggca aaagctgaaa aatcatgctt anacctnggn cgngaccacn ctaagggcga 480
attccancac actggcggnc gttactagtg gatccnanct cggtaccaag cttggcgtaa 540

tcctnggcat agctgtttc 559

<210> 1661
<211> 453
<212> DNA
<213> Homo sapiens

<400> 1661
ttgggccctc tagatgcatg ctcgagcggc cgccagtgtg atggatatct gcagaattcg 60
ccctttcgag cggccgcccg ggcaggtctg cagtgtccct ttttatatca tgctagtgtt 120
gagacatact tgactaactt gggaacagtt cgatatattg acaaccgtca acttaagaaa 180
atcaacagct tttggcccca gcgtccaagt gaacttttca tggagtgcag aatctcaaat 240
ggacaaaata ctttgtcttt ttaaatactg aaaatttaat tattagtact atgactgaaa 300
gattcttcat ggctaaaaag ctctgcatca aactcaattc aggaggacct cggccgcgac 360
cacgctaagg gcgaattcca gcacactggc ggccgttact agtggatccg agctcggtac 420
caagcttggc gtaatcatgg tcatagctgt ttc 453

<210> 1662
<211> 809
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(809)
<223> n = A,T,C or G

<400> 1662
ctcgagcggc cgccantgtg atggntatct gcagaattcg cccttancgg ccgcccgggc 60
aggtccttag ccaaagaatg cagtggagcc ttcccccngg ggctgcattg tgaatgaata 120
ccaattgaca gcataaaaat taatagtccc atatcagatc tggaaggggt ttctggggct 180
gtctgatgtc cctatcctgt tgtagtgaac acaatagcag aaaattcttt ctgggtccat 240
ctgctataaa gtcttggtaa aacagcatta ctatgaagag gatgaactca cctaccttca 300
natggaggaa aagtgaaaag gacttaggct ttagtcctcc atgacttttc ttaagcacta 360
cctacctgta ataagctgag tgcaaaagga tgccgaagaa aatctgcacc cagaagctgt 420
tagaaagcac tgcagangaa cagggnatga ataaaataaa nagntcttaa taaaccctta 480
agattctttg ntcaaggggn actttgccaa aaggggcaga atangngggn aaagagttgc 540
ttttaatcta gctctacact ggcntttgaa aataaaattt gcccatttng aaatatatng 600
ggntataatt aaaatgnggc tttttacact ggnggggcta tataaaaact gggtagnnaa 660
atttccaccg agcatntatg gngatttgnt cacagnaaac ctccgggcng gacccacgct 720
aagggnggaa ttccagcnac antgggggg ncngntacct anagtggatc ccnagnctng 780
gggnccccna anctttgggg gngtnaatc 809

<210> 1663
<211> 585
<212> DNA
<213> Homo sapiens

<400> 1663
ttgggccctc tagatgcatg ctcgagcggc cgccagtgtg atggatatct gcagaattcg 60
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gatatctaca aggctaataa cattgcctat gaagatgtgg tcgggggaga agactggaac 180
ccagtagagg agaaaataga gagtcaaacc caggaagagg tgagagacag caaagagaat 240
atagaaaaaa atgaacaaat caacgatgag atgaaacgct cagggcagct tggcatccag 300

gaagaagatc ttcggaaaga gagtaaagac caactctcag atgatgtctc caaagtaatt 360
gcctatttga aaaggttagt aaatgctgca ggaagtggga ggttacagaa tgggcaaaat 420
ggggaaaggg ccaccaggct ttttgagaaa cctcttgatt ctcagtctat ttatcagacc 480
tcggccgcga ccacgctaag ggcgaattcc agcacactgg cggccgttac tagtggatcc 540
gagctcggta ccaagcttgg cgtaatcatg gtcatagctg tttcc 585

<210> 1664
<211> 999
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(999)
<223> n = A,T,C or G

<400> 1664
anccngctcn agcggccgcc antgtgatgg atatctgcag aattcgccct ttcgagcggg 60
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aagtccaaaa ctactcacac gcatctcttn attggggaaa agctgagact attatncatt 180
cttggtagnc ttgcaacctt gcatgaagag cacccattgc atttctttca tctttcagaa 240
agcaccggta tctgttccaa gggnctaaca gtacnaaaat acnttntggg attacacctt 300
tnaaacccaa nactgttntc attaaaaata attttggntt gtaacaaaat tatgaaatac 360
aatgcaagca cctnggtata gcattattac tgaaaccact taattcccag ctttttgagt 420
tttttaaaaa aacccactgc actaagattc acaattcatt gctacataca aattaaagct 480
agtaagaaca cactaacgtc acaagtttct cattctaaag tgcnaaancc ntaatngtct 540
ngaaagtgga acaggggtaa agggcaaaaa ttaacccccc ccaccccaat taaagtttcc 600
tggaangtca ntantntttt naatccccaa aggnnncatt tctntttaaa aaaattggnt 660
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ttnaanccaa ccccccaatt ccaccttaaa aacccccacc cgggggangg ccaaaangnc 780
caccccttgng gaaacnctttt tngtgggggn cccggtcgna aaacccaacc nccctntaaa 840
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cctttggggg gggaaaaatg aatgggggnc cattaaccn 999

<210> 1665
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 1665
gctaaaggtg accccaagaa accaaag 27

<210> 1666
<211> 37
<212> DNA
<213> Artificial Sequence

<220>

<223> PCR primer

<400> 1666
ctattaactc gagggagaca gataaacagt ttcttta 37

<210> 1667
<211> 207
<212> PRT
<213> Homo sapiens

<400> 1667
Met Gln His His His His His His Ala Lys Gly Asp Pro Lys Lys Pro
1 5 10 15
Lys Gly Lys Met Ser Ala Tyr Ala Phe Phe Val Gln Thr Cys Arg Glu
20 25 30
Glu His Lys Lys Lys Asn Pro Glu Val Pro Val Asn Phe Ala Glu Phe
35 40 45
Ser Lys Lys Cys Ser Glu Arg Trp Lys Thr Met Ser Gly Lys Glu Lys
50 55 60
Ser Lys Phe Asp Glu Met Ala Lys Ala Asp Lys Val Arg Tyr Asp Arg
65 70 75 80
Glu Met Lys Asp Tyr Gly Pro Ala Lys Gly Gly Lys Lys Lys Lys Asp
85 90 95
Pro Asn Ala Pro Lys Arg Pro Pro Ser Gly Phe Phe Leu Phe Cys Ser
100 105 110
Glu Phe Arg Pro Lys Ile Lys Ser Thr Asn Pro Gly Ile Ser Ile Gly
115 120 125
Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Leu Asn Asp Ser
130 135 140
Glu Lys Gln Pro Tyr Ile Thr Lys Ala Ala Lys Leu Lys Glu Lys Tyr
145 150 155 160
Glu Lys Asp Val Ala Asp Tyr Lys Ser Lys Gly Lys Phe Asp Gly Ala
165 170 175
Lys Gly Pro Ala Lys Val Ala Arg Lys Lys Val Glu Glu Glu Asp Glu
180 185 190
Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Asp Glu
195 200 205

<210> 1668
<211> 636
<212> DNA
<213> Homo sapiens

<400> 1668
catatgcagc atcaccacca tcaccacgct aaaggtgacc ccaagaaacc aaagggcaag 60
atgtccgctt atgccttctt tgtgcagaca tgcagagaag aacataagaa gaaaaaccca 120
gaggtccctg tcaattttgc ggaattttcc aagaagtgct ctgagaggtg gaagacgatg 180
tccgggaaag agaaatctaa atttgatgaa atggcaaagg cagataaagt gcgctatgat 240
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tccacaaacc ccggcatctc tattggagac gtggcaaaaa agctgggtga gatgtggaat 420
aatttaaatg acagtgaaaa gcagccttac atcactaagg cggcaaagct gaaggagaag 480
tatgagaagg atgttgctga ctataagtcg aaaggaaagt ttgatggtgc aaagggtcca 540

gctaaagttg cccggaaaaa ggtggaagag gaagatgaag aagaggagga ggaagaagag 600
gaggaggagg aggaggagga tgaataatga ctcgag 636

<210> 1669
<211> 2821
<212> DNA
<213> Homo sapiens

<400> 1669
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gggttgaggc cggaccgcgg cggggtcggg ggagaaacgc gcgctgccct ggcacgggcc 180
ccaaccccc ggccgcgcgg aatggtatgg cccggccgga gttaaggccg gggggaggcg 240
gcgagtcccg cggcggcggc gacgatgggg ctgcgtgcag gaggaacgct gggcagggcc 300
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ctgccgtccg tgttggaccc cgccaaggtg cagagcctcg tggacacgat ccgggaggac 480
ccagacagcg tgcccccat cgatgtcctc tggatcaaag gggcccaggg aggtgactac 540
ttctactcct ttgggggctg ccaccgctac gcggcctacc agcaactgca gcgagagacc 600
atccccgcca agcttgtcca gtccactctc tcagacctaa gggtgtacct gggagcatcc 660
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cagtgtcact tctgctaagt tcttttggtc agagcaaatc acaaggcttt acccagattc 1980
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taatttaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2820
a 2821

<210> 1670
<211> 137
<212> PRT
<213> Homo sapiens

<400> 1670
Met Gly Leu Arg Ala Gly Gly Thr Leu Gly Arg Ala Gly Ala Gly Arg
5 10 15

Gly Ala Pro Glu Gly Pro Gly Pro Ser Gly Gly Ala Gln Gly Gly Ser
20 25 30

Ile His Ser Gly Arg Ile Ala Ala Val His Asn Val Pro Leu Ser Val
35 40 45

Leu Ile Arg Pro Leu Pro Ser Val Leu Asp Pro Ala Lys Val Gln Ser
50 55 60

Leu Val Asp Thr Ile Arg Glu Asp Pro Asp Ser Val Pro Pro Ile Asp
65 70 75 80

Val Leu Trp Ile Lys Gly Ala Gln Gly Gly Asp Tyr Phe Tyr Ser Phe
85 90 95

Gly Gly Cys His Arg Tyr Ala Ala Tyr Gln Gln Leu Gln Arg Glu Thr
100 105 110

Ile Pro Ala Lys Leu Val Gln Ser Thr Leu Ser Asp Leu Arg Val Tyr
115 120 125

Leu Gly Ala Ser Thr Pro Asp Leu Gln
130 135

<210> 1671
<211> 109
<212> PRT
<213> Homo sapiens

<400> 1671
Met Ala Arg Pro Glu Leu Arg Pro Gly Gly Gly Gly Glu Ser Arg Gly
5 10 15

Gly Gly Asp Asp Gly Ala Ala Cys Arg Arg Asn Ala Gly Gln Gly Arg
20 25 30

Arg Gly Ser Gly Gly Ala Arg Gly Ala Arg Ala Glu Arg Arg Arg Ala
35 40 45

Gly Arg Gln His Pro Leu Gly Pro His Arg Arg Gly Ala Gln Arg Ala
     50   55   60

Ala Glu Arg Ala His Pro Ala Ala Ala Val Arg Val Gly Pro Arg Gln
65   70   75   80

Gly Ala Glu Pro Arg Gly His Asp Pro Gly Gly Pro Arg Gln Arg Ala
                85   90   95

Pro His Arg Cys Pro Leu Asp Gln Arg Gly Pro Gly Arg
            100   105

<210> 1672
<211> 145
<212> PRT
<213> Homo sapiens

<400> 1672
Met Gly Leu Lys Ser His Val Leu Pro Ala Pro Asn Ser Gln Gly Gln
                5   10   15

Gly Ser Leu Cys Ile Phe Val Tyr Val Thr Ser Tyr Met Asp Tyr Ile
            20   25   30

Gln Leu Gln Gly Lys Glu Asn Leu Asp Cys Ser Gly Leu Asn Lys Gln
        35   40   45

Lys Ile Val Phe Pro His Ser Met Asp Ser Gly Asp Gly Trp Leu Met
    50   55   60

Val Leu Val Gln Gln Leu His Glu Gly Arg Gly His Val Leu Asp Pro
65   70   75   80

Phe Ala Leu Ile Ser Val Leu Val Thr Ser Trp Ser Gln Asp Gly Cys
                85   90   95

Cys Ile Pro Lys Asn His Val Cys Val Gln Gly Arg Arg Gly Gly Gly
            100   105   110

Arg Gly Arg Ala Lys Leu Ala Gly Pro Val Thr Phe Tyr Gln Lys Val
        115   120   125

Lys Pro Arg Gln Lys Ser Val Ser Cys Ser Leu Pro Leu His Ile Phe
    130   135   140

Thr
145

<210> 1673
<211> 117
<212> PRT
<213> Homo sapiens

<400> 1673
Met Asp Tyr Ile Gln Leu Gln Gly Lys Glu Asn Leu Asp Cys Ser Gly
5 10 15

Leu Asn Lys Gln Lys Ile Val Phe Pro His Ser Met Asp Ser Gly Asp
20 25 30

Gly Trp Leu Met Val Leu Val Gln Gln Leu His Glu Gly Arg Gly His
35 40 45

Val Leu Asp Pro Phe Ala Leu Ile Ser Val Leu Val Thr Ser Trp Ser
50 55 60

Gln Asp Gly Cys Cys Ile Pro Lys Asn His Val Cys Val Gln Gly Arg
65 70 75 80

Arg Gly Gly Gly Arg Gly Arg Ala Lys Leu Ala Gly Pro Val Thr Phe
85 90 95

Tyr Gln Lys Val Lys Pro Arg Gln Lys Ser Val Ser Cys Ser Leu Pro
100 105 110

Leu His Ile Phe Thr
115

<210> 1674
<211> 90
<212> PRT
<213> Homo sapiens

<400> 1674
Met Asp Ser Gly Asp Gly Trp Leu Met Val Leu Val Gln Gln Leu His
5 10 15

Glu Gly Arg Gly His Val Leu Asp Pro Phe Ala Leu Ile Ser Val Leu
20 25 30

Val Thr Ser Trp Ser Gln Asp Gly Cys Cys Ile Pro Lys Asn His Val
35 40 45

Cys Val Gln Gly Arg Arg Gly Gly Gly Arg Gly Arg Ala Lys Leu Ala
50 55 60

Gly Pro Val Thr Phe Tyr Gln Lys Val Lys Pro Arg Gln Lys Ser Val
65 70 75 80

Ser Cys Ser Leu Pro Leu His Ile Phe Thr
85 90

<210> 1675
<211> 102

<212> PRT
<213> Homo sapiens

<400> 1675
Met Gln Asn Cys Val Pro Val Ser Phe Cys Cys Val Thr Asn His Pro
1   5   10   15

Gln Thr Trp Gln Leu Glu Thr Asn Pro Val Phe Ser His Asn Pro Met
            20   25   30

Gly Trp Gln Phe Gly Leu Gly Ser Thr Gly Gln Phe Cys Cys Ser His
        35   40   45

Leu Gly Ser Leu Met Glu Leu Arg Ser Ala Val Thr Ser Ala Gly Pro
    50   55   60

Gly Trp Ser Arg Ile Ala Leu Leu Thr Cys Leu Ala Gly Asp Arg Leu
65   70   75   80

Leu Ala Gly Ile Ala Trp Phe Ser Ser Met Trp Pro Leu Gln Gln Ala
                85   90   95

Ser Ser Gly Leu Phe Thr
            100

<210> 1676
<211> 1336
<212> DNA
<213> Homo sapiens

<400> 1676
ctctaagcag catgtaacct ggcctgcatc caggaaatag aggacttcgg atccttctaa 60
ccctaccacc caactggccc cagtacattc attctctcag gaaaaaaaac aaggtcccca 120
cagcaaagaa aaggaatagg atcaagagat acgtggctgc tggcagagca agcatgaatt 180
cgatgacttc agcagttccg gtggccaatt ctgtgttggt ggtggcaccc cacaatggtt 240
atcctgtgac cccaggaatt atgtctcacg tgcccctgta tccaaacagc cagccgcaag 300
tccacctagt tcctgggaac ccacctagtt tggtgtcgaa tgtgaatggg cagcctgtgc 360
agaaagctct gaaagaaggc aaaaccttgg gggccatcca gatcatcatt ggcctggctc 420
acatcggcct cggctccatc atggcgacgg ttctcgtagg ggaatacctg tctatttcat 480
tctacggagg ctttcccttc tggggaggct tgtggtttat catttcagga tctctctccg 540
tggcagcaga aaatcagcca tattcttatt gcctgctgtc tggcagtttg ggcttgaaca 600
tcgtcagtgc aatctgctct gcagttggag tcatactctt catcacagat ctaagtattc 660
cccacccata tgcctacccc gactattatc cttacgcctg gggtgtgaac cctggaatgg 720
cgatttctgg cgtgctgctg gtcttctgcc tcctggagtt tggcatcgca tgcgcatctt 780
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acatctatgc agcaaaccca gtgatcaccc cagaaccggt gacctcacca ccaagttatt 900
ccagtgagat ccaagcaaat aagtaaggct acagattctg gaagcatctt tcactgggac 960
caaaagaagt cctcctccct ttctgggctt ccataaccca ggtcgttcct gttctgacag 1020
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agacattcaa tcttcactct ttcaattgtg cattcattta ataaatagat actgagcatt 1320
caatgtgaaa aaaaaa 1336

<210> 1677
<211> 250
<212> PRT
<213> Homo sapiens

<400> 1677
Met Asn Ser Met Thr Ser Ala Val Pro Val Ala Asn Ser Val Leu Val
5 10 15

Val Ala Pro His Asn Gly Tyr Pro Val Thr Pro Gly Ile Met Ser His
20 25 30

Val Pro Leu Tyr Pro Asn Ser Gln Pro Gln Val His Leu Val Pro Gly
35 40 45

Asn Pro Pro Ser Leu Val Ser Asn Val Asn Gly Gln Pro Val Gln Lys
50 55 60

Ala Leu Lys Glu Gly Lys Thr Leu Gly Ala Ile Gln Ile Ile Ile Gly
65 70 75 80

Leu Ala His Ile Gly Leu Gly Ser Ile Met Ala Thr Val Leu Val Gly
85 90 95

Glu Tyr Leu Ser Ile Ser Phe Tyr Gly Gly Phe Pro Phe Trp Gly Gly
100 105 110

Leu Trp Phe Ile Ile Ser Gly Ser Leu Ser Val Ala Ala Glu Asn Gln
115 120 125

Pro Tyr Ser Tyr Cys Leu Leu Ser Gly Ser Leu Gly Leu Asn Ile Val
130 135 140

Ser Ala Ile Cys Ser Ala Val Gly Val Ile Leu Phe Ile Thr Asp Leu
145 150 155 160

Ser Ile Pro His Pro Tyr Ala Tyr Pro Asp Tyr Tyr Pro Tyr Ala Trp
165 170 175

Gly Val Asn Pro Gly Met Ala Ile Ser Gly Val Leu Leu Val Phe Cys
180 185 190

Leu Leu Glu Phe Gly Ile Ala Cys Ala Ser Ser His Phe Gly Cys Gln
195 200 205

Leu Val Cys Cys Gln Ser Ser Asn Val Ser Val Ile Tyr Pro Asn Ile
210 215 220

Tyr Ala Ala Asn Pro Val Ile Thr Pro Glu Pro Val Thr Ser Pro Pro
225 230 235 240

Ser Tyr Ser Ser Glu Ile Gln Ala Asn Lys
245 250

<210> 1678
<211> 177
<212> PRT
<213> Homo sapiens

<400> 1678
Thr Arg Pro Arg Arg Ala Ala Gln Gly Arg Arg Glu Ala Pro Pro Gly
5 10 15

Gly Glu Pro Glu Pro Arg Ala Ser Leu Ala Ala Pro Gly Glu Arg Ser
20 25 30

Arg Ser Arg Ala Gly Asp Arg Gly Val Glu Ala Gly Pro Arg Arg Gly
35 40 45

Arg Gly Arg Asn Ala Arg Cys Pro Gly Thr Gly Pro Asn Pro Pro Ala
50 55 60

Ala Arg Asn Gly Met Ala Arg Pro Glu Leu Arg Pro Gly Gly Gly Gly
65 70 75 80

Glu Ser Arg Gly Gly Gly Asp Asp Gly Ala Ala Cys Arg Arg Asn Ala
85 90 95

Gly Gln Gly Arg Arg Gly Ser Gly Gly Ala Arg Gly Ala Arg Ala Glu
100 105 110

Arg Arg Arg Ala Gly Arg Gln His Pro Leu Gly Pro His Arg Arg Gly
115 120 125

Ala Gln Arg Ala Ala Glu Arg Ala His Pro Ala Ala Ala Val Arg Val
130 135 140

Gly Pro Arg Gln Gly Ala Glu Pro Arg Gly His Asp Pro Gly Gly Pro
145 150 155 160

Arg Gln Arg Ala Pro His Arg Cys Pro Leu Asp Gln Arg Gly Pro Gly
165 170 175

Arg

<210> 1679
<211> 42
<212> PRT
<213> Homo sapiens

<400> 1679
Leu Val Cys Cys Gln Ser Ser Asn Val Ser Val Ile Tyr Pro Asn Ile

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1               5                   10                  15
Tyr Ala Ala Asn Pro Val Ile Thr Pro Glu Pro Val Thr Ser Pro Pro
            20                  25                  30
Ser Tyr Ser Ser Glu Ile Gln Ala Asn Lys
        35                  40
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